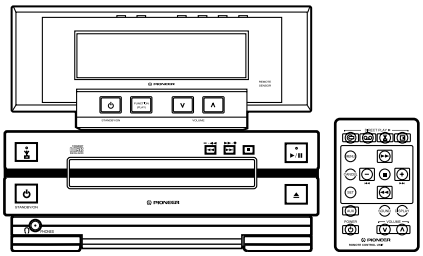
Service Manual

PIONEER®
The Art of Entertainment



ORDER NO.
RRV1946

STEREO CD RECEIVER

XC-L7

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	XC-L7		
KUXJ/CA	○	AC120V	

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

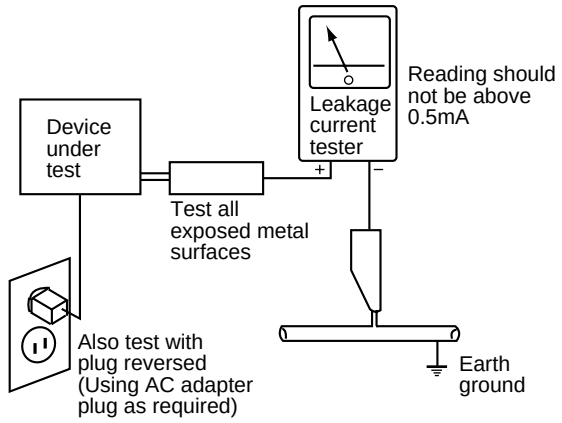
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
+
–
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

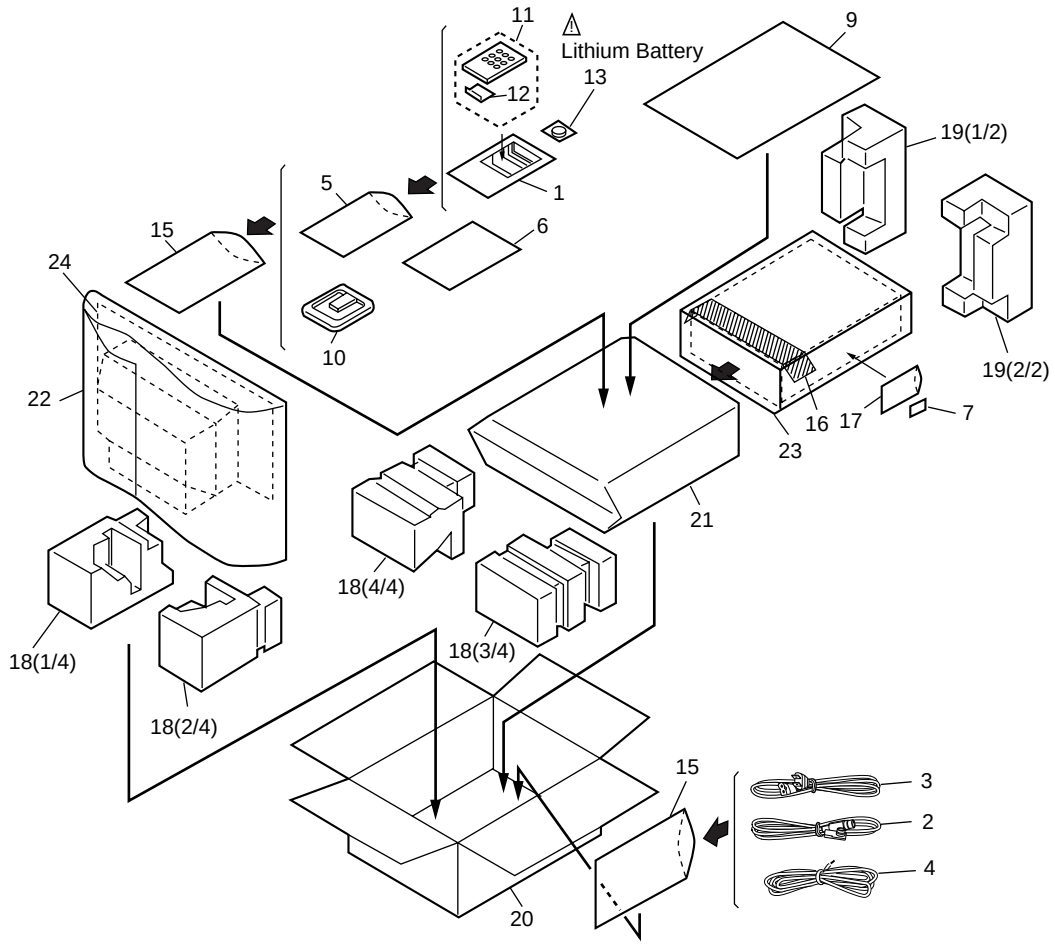
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on the product are used for disassembly.*

2.1 PACKING

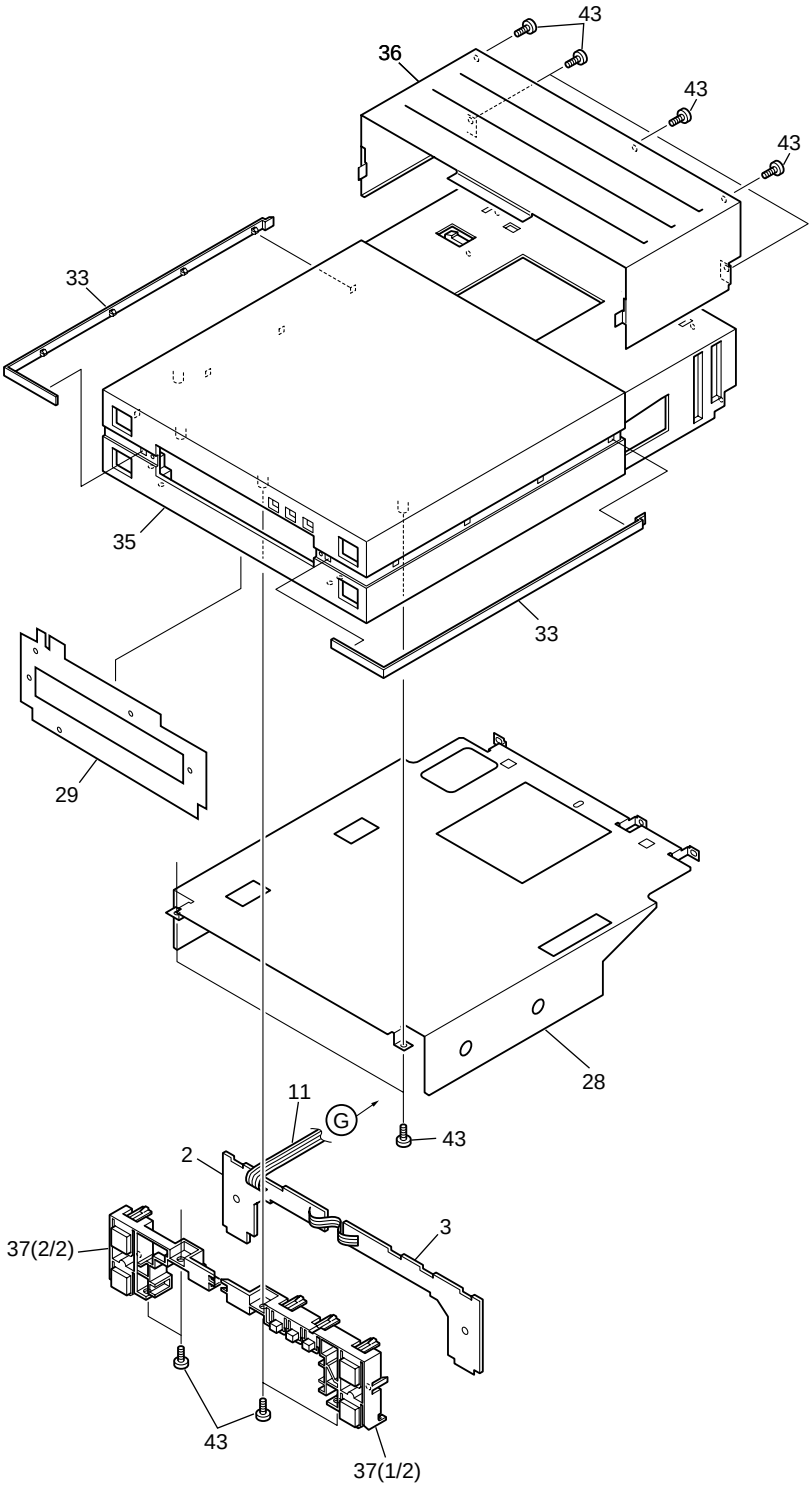


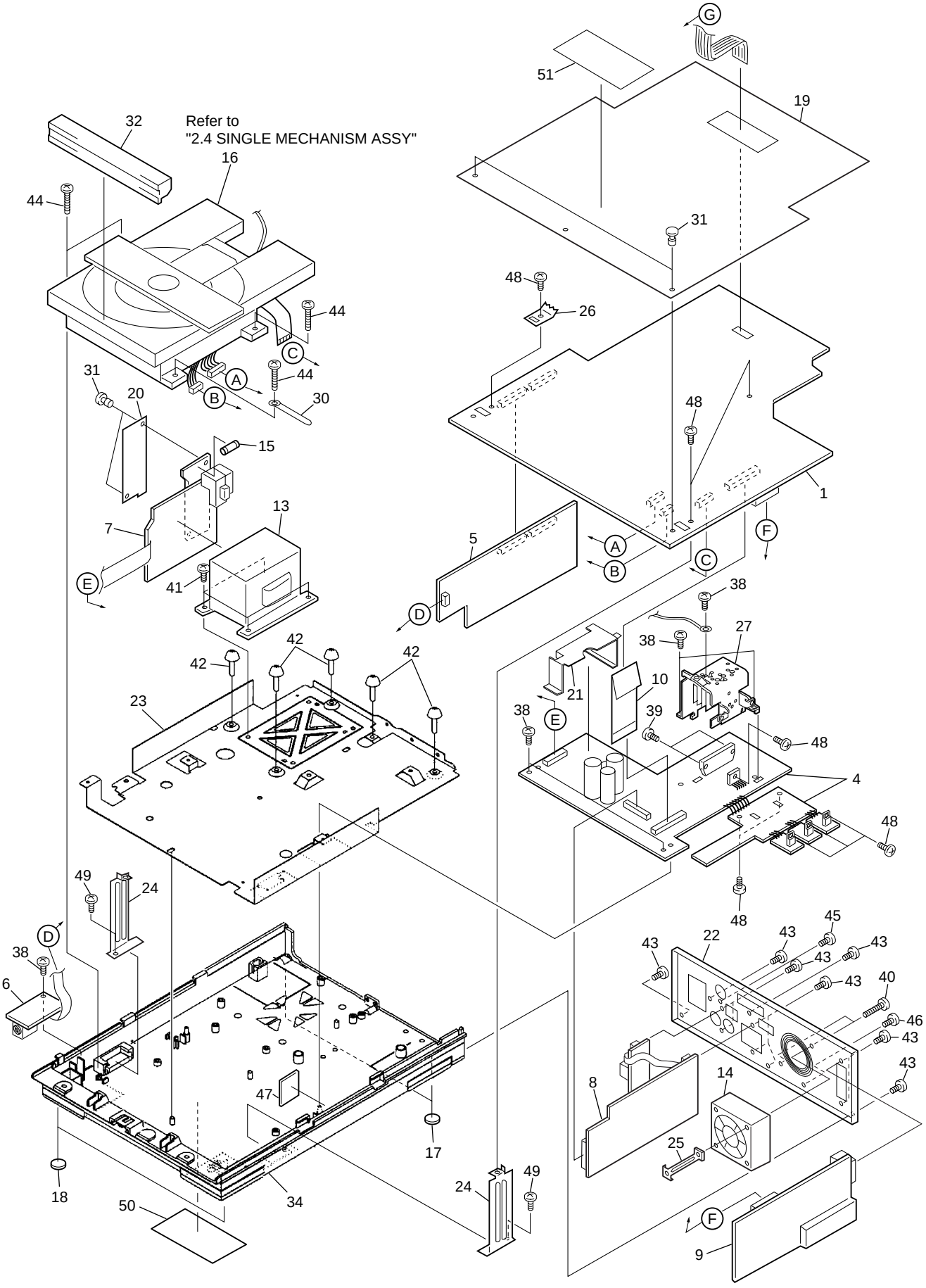
• PACKING PARTS LIST

Mark	No.	Description	Part No.
	1	Remote Control Unit Holder	AAH7008
	2	Display Unit Cord (10P Mini-DIN Cable)	ADE7014
⚠	3	Power Cord	ADG1152
	4	FM Antenna	ADH7004
NSP	5	Vinyl Bag	AHG7031
	6	Operating Instructions (English/French)	ARE7169
NSP	7	Caution SG	ARR7013
	8	• • • • •	
NSP	9	Warranty Card	ARY1051
	10	AM Loop Antenna	ATB7007
	11	Remote Control Unit (CU-XC004)	AXD7145
	12	Battery Case	AZE7116

Mark	No.	Description	Part No.
NSP⚠	13	Lithium Battery (CR2025)	VEM1009
	14	• • • • •	
	15	Polyethylene Bag	Z21-038
NSP	16	Protect Sheet	AEH7004
NSP	17	Silica Gel	AEN7001
	18	Pad FCD (PS)	AHA7175
	19	Pad RCD (PS)	AHA7182
	20	Packing Case	AHD7622
NSP	21	Vinyl Bag	AHG7036
NSP	22	Polyethylene Bag	CEG1116
	23	Mirror Mat Sheet	Z23-007
NSP	24	DISPLAY UNIT DU-L7	• • • • •

2.2 MAIN SECTION (XC-L7)



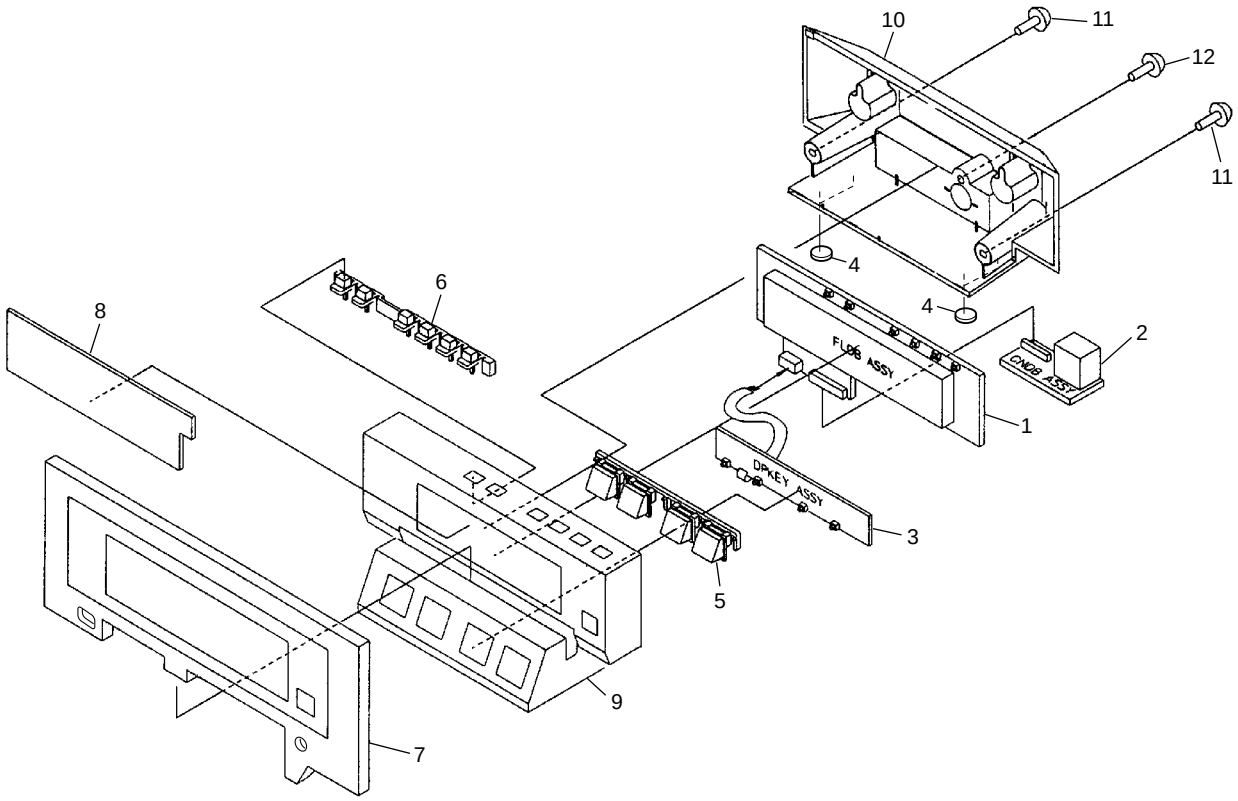

Refer to
"2.4 SINGLE MECHANISM ASSY"

• MAIN SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	CD MAIN Unit	AWU7147
	2	CD KEYB1 Unit	AWZ8985
	3	CD KEYB2 Unit	AWZ8986
	4	POWER AMP Unit	AWZ8990
	5	POWER AF Unit	AWZ8991
	6	POWER HP Unit	AWU7006
	7	POWER TRANS Unit	AWU7148
	8	POWER SPTB Unit	AWU7149
	9	FM/AM Tuner Module	AXQ7065
	10	Lead Card(33P)	ADD7065
	11	Lead Card(5P)	ADD7066
	12	• • • • •	
⚠	13	Power Transformer(T1)	ATS7216
	14	DC Fan Motor	AXM7003
⚠	15	Fuse(FU1, 2A)	REK1078
NSP	16	Single Mechanism Assy	RXA1672
	17	Leg	AEB7090
	18	Front Leg	AEB7102
	19	Top Barrier	AEC7122
	20	Side Barrier	AEC7104
	21	M Barrier	AEC7121
	22	Rear Panel	ANC7694
NSP	23	Bottom Plate CD	ANF7007
	24	Angle	ANG7151
	25	Fan Plate	ANG7153
	26	Earth Plate	ANG7168
NSP	27	Heat Sink	ANH7066
NSP	28	Top Plate	ANK7034
	29	Tray Sheet	AWL7027
	30	Cord Clamper	RNH-184

Mark	No.	Description	Part No.
	31	Rivet	VEC1178
	32	Tray Panel CD	AAN7170
	33	Black Line	AAP7033
	34	Bottom Base CD	AMA7003
	35	Top Panel	AMB7523
	36	Bonnet	ANE7168
	37	Button Assy	AWL7024
	38	Screw	BBZ30P080FMC
	39	Screw	IBZ30P150FCC
	40	Screw	BBZ30P300FZK
	41	Screw	BBZ40P060FMC
	42	Screw	BPZ30P060FZK
	43	Screw	BPZ30P080FZK
	44	Screw	BPZ30P180FZK
	45	Screw	PMZ30P060FZK
	46	Screw	VBZ30P080FZK
NSP	47	Spacer A	AEB7085
	48	Screw	BBZ30P080FCC
	49	Screw	BPZ30P060FCU
NSP	50	Name Label	ARW7039
	51	65 Label	ORW1069

2.3 DISPLAY UNIT DU-L7

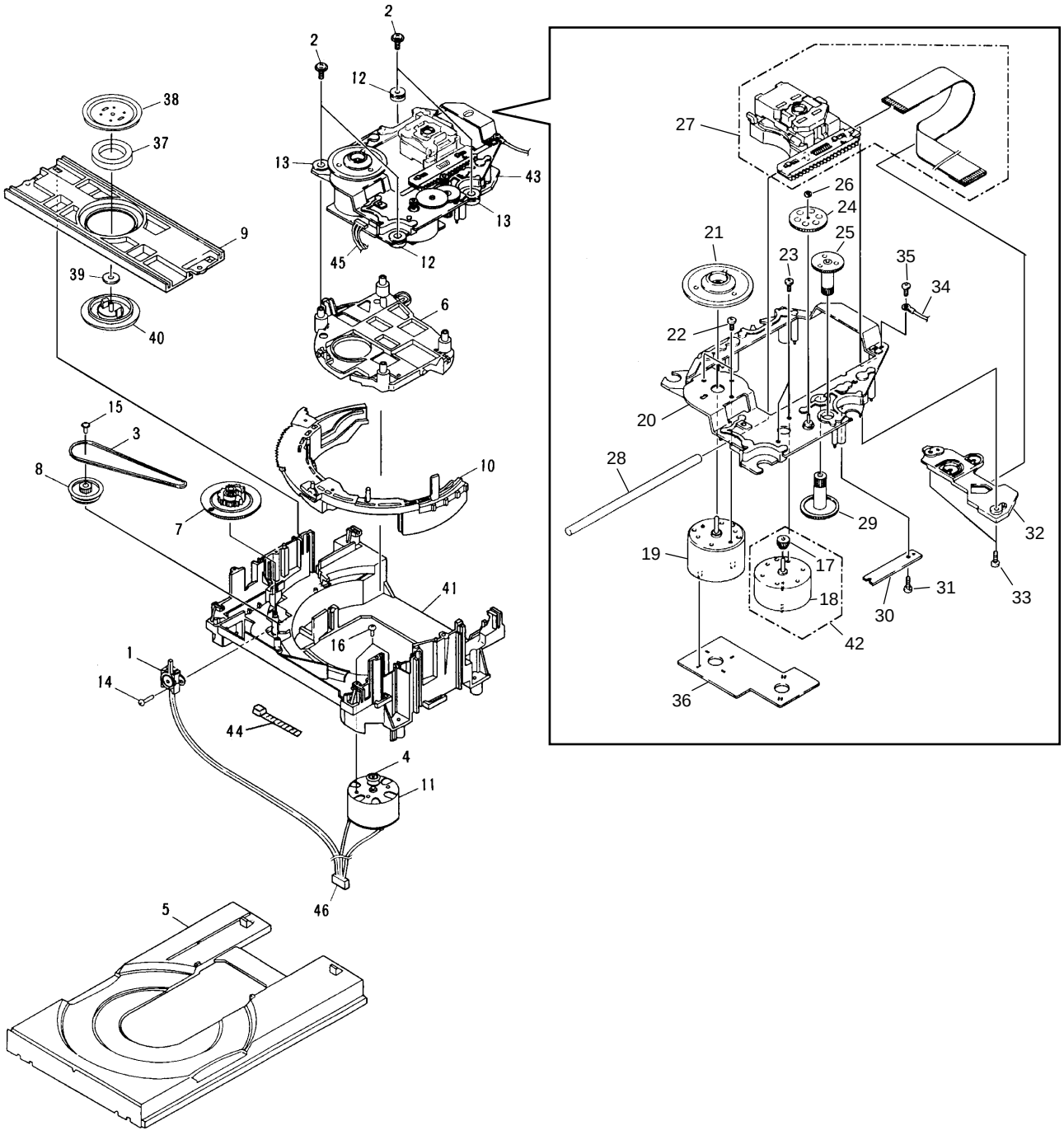


• DISPLAY SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	CD FLDP Unit	AWU7003
	2	CD CNB Unit	AWZ8988
	3	CD DPKEY Unit	AWZ8989
	4	Leg	AEB7090
	5	Display Button	AAD7409
	6	Top Button	AAD7430
	7	Window	AAK7461
	8	FL Filter	AEC7117
	9	Display Panel	AMB7458
	10	Rear Cover	AMC7013

Mark	No.	Description	Part No.
	11	Screw	BPZ30P100FZK
	12	Screw	PMZ30P060FZK

2.4 SINGLE MECHANISM ASSY



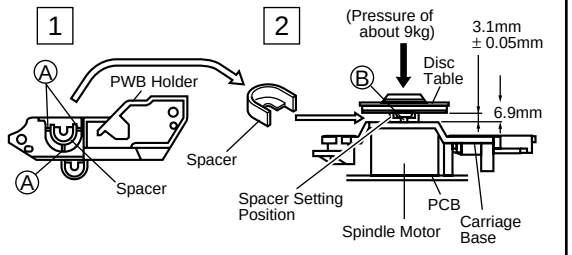
• SINGLE MECHANISM ASSY PARTS LIST

Mark	No.	Description	Part No.
	1	Lever Switch(S601)	DSK1003
	2	Screw	PBA1048
	3	Rubber Belt	PEB1193
	4	Motor Pulley	PNW1634
	5	Tray Black V	PNW2455
	6	Float Base	PNW2032
	7	Drive Gear 2	PNW2369
	8	Gear Pulley	PNW2034
	9	Clamper Base	PNW2375
	10	Clamp Cam	PNW2364
	11	DC Motor/0.75W	PXM1010
	12	Float Rubber B	REB1287
	13	Float Rubber G	REB1288
	14	Screw	BPZ26P080FMC
	15	Screw	Z39 - 019
	16	Screw	PMZ26P040FMC
	17	Pinion Gear	PNW2055
	18	DC Motor (CARRIAGE)	PXM1027
	19	D.C. Motor Assy (SPINDLE)	PEA1235
	20	Carriage Base	PNW2699
	21	Disc Holder	PNW1608
	22	Screw	JFZ20P030FNI
	23	Screw	JFZ17P025FZK
	24	Gear 3	PNW2054
	25	Gear 2	PNW2053
	26	Washer	WT12D032D025
	27	Pick Up Assy-S	PEA1291
	28	Guide Bar	PLA1094
	29	Gear 1	PNW2052
	30	Gear Stopper	PNB1303
	31	Screw	BPZ20P060FMC
	32	PWB Holder	PNW2057
	33	Screw	BPZ26P100FMC
	34	Earth Lead Unit	PDF1104
	35	Screw	BBZ26P060FMC
NSP	36	Mechanism Board Assy	PWX1192
	37	Clamp Magnet	PMF1014
	38	Yoke	PNB1216
NSP	39	H Rubber	PEB1249
	40	Clamper S	PNW1609
	41	Loading Base	PNW2376
	42	D.C. Motor Assy (CARRIAGE)	PEA1246
NSP	43	Servo Mechanism Assy SL	AXA7017
	44	Binder	Z09 - 056
	45	Connector Assy (4P)	RDE1043
	46	Connector Assy (5P)	PDE1239

• How to install the disc table

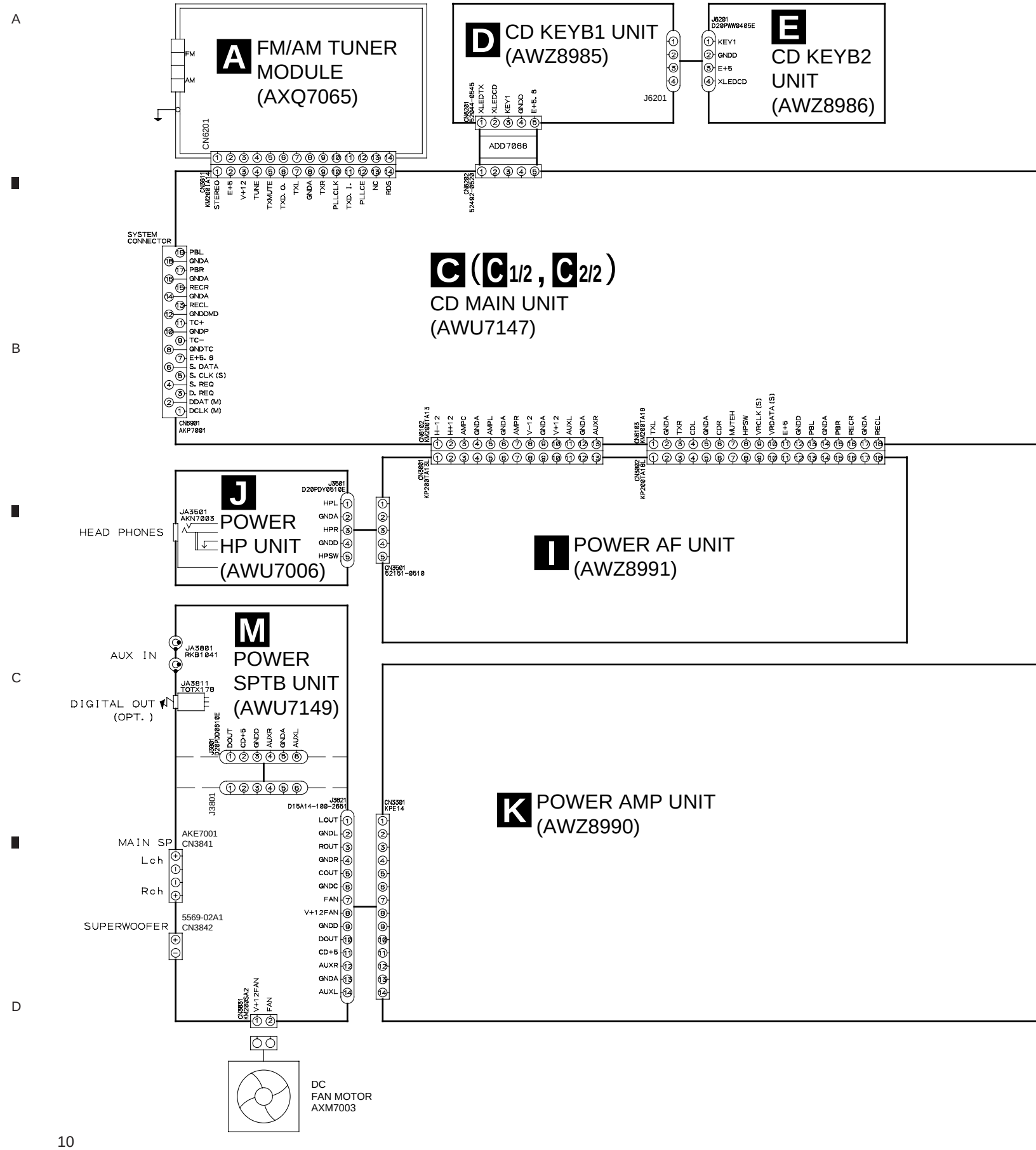
1 Use nipper or other tool to cut the three sections marked Ⓐ figure 1 . Then remove the spacer.

2 While supporting the spindle motor shaft with the stopper, put spacer on top of the motor base (angled so it doesn't touch section Ⓑ), and stick the disc table on top (takes about 9 kg pressure). Take off the spacer.

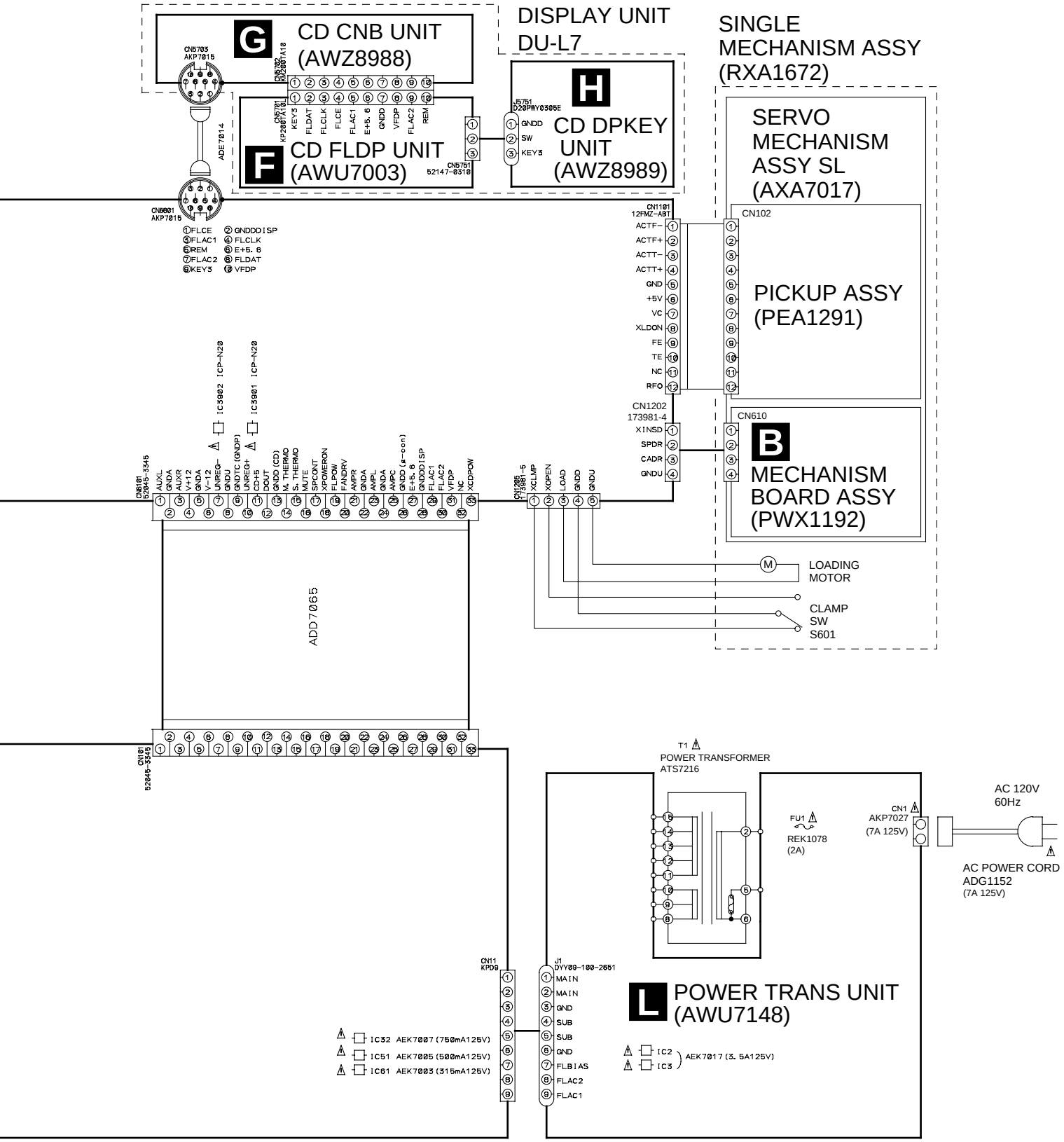


3. SCHEMATIC DIAGRAM

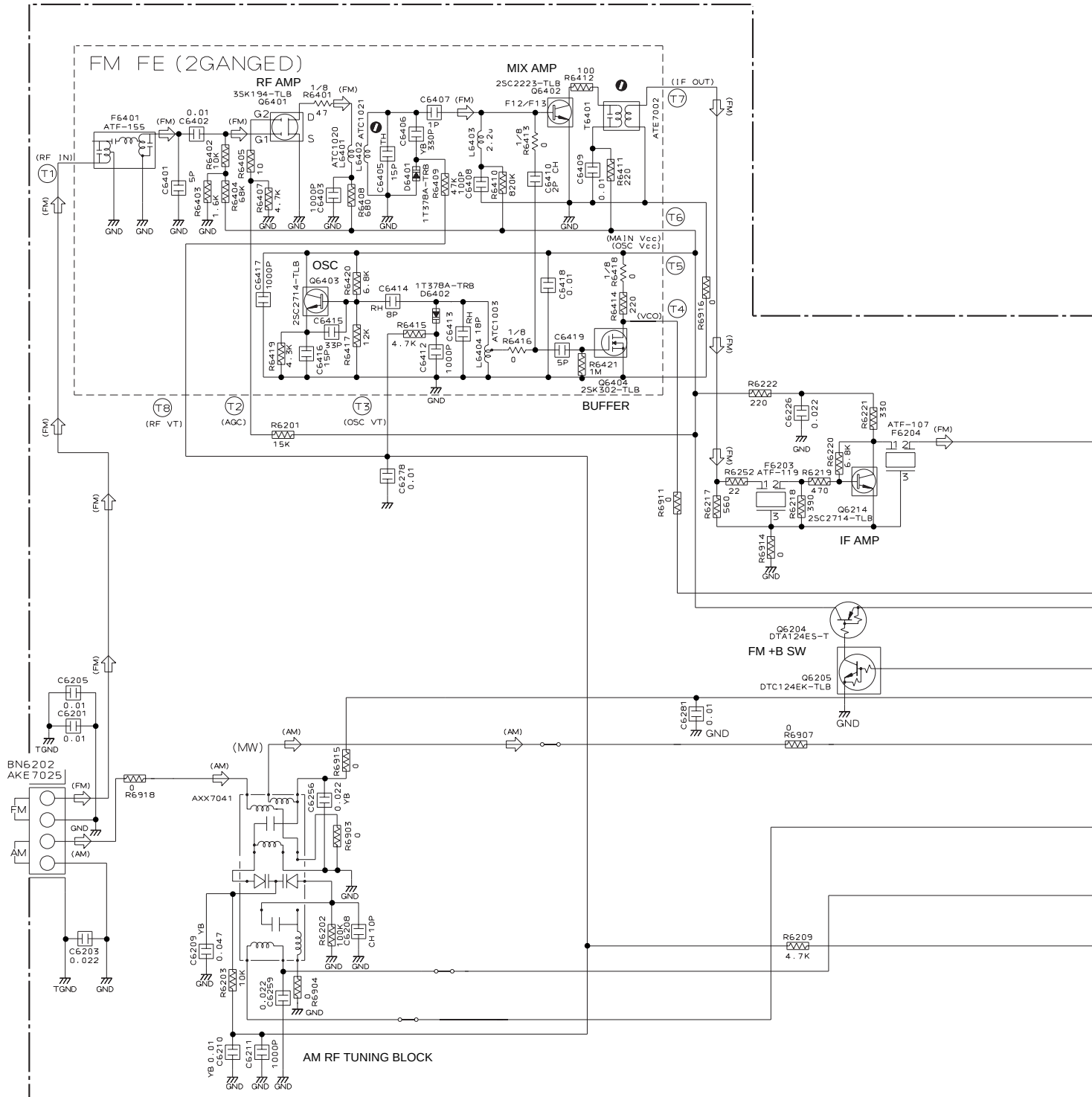
3.1 OVERALL CONNECTION DIAGRAM



Note : When ordering service parts, be sure to refer to
"EXPLODED VIEWS AND PARTS LIST" or "PCB PARTS LIST".



3.2 FM/AM TUNER MODULE



A FM/AM TUNER MODULE (AXQ7065)

SIGNAL ROUTE

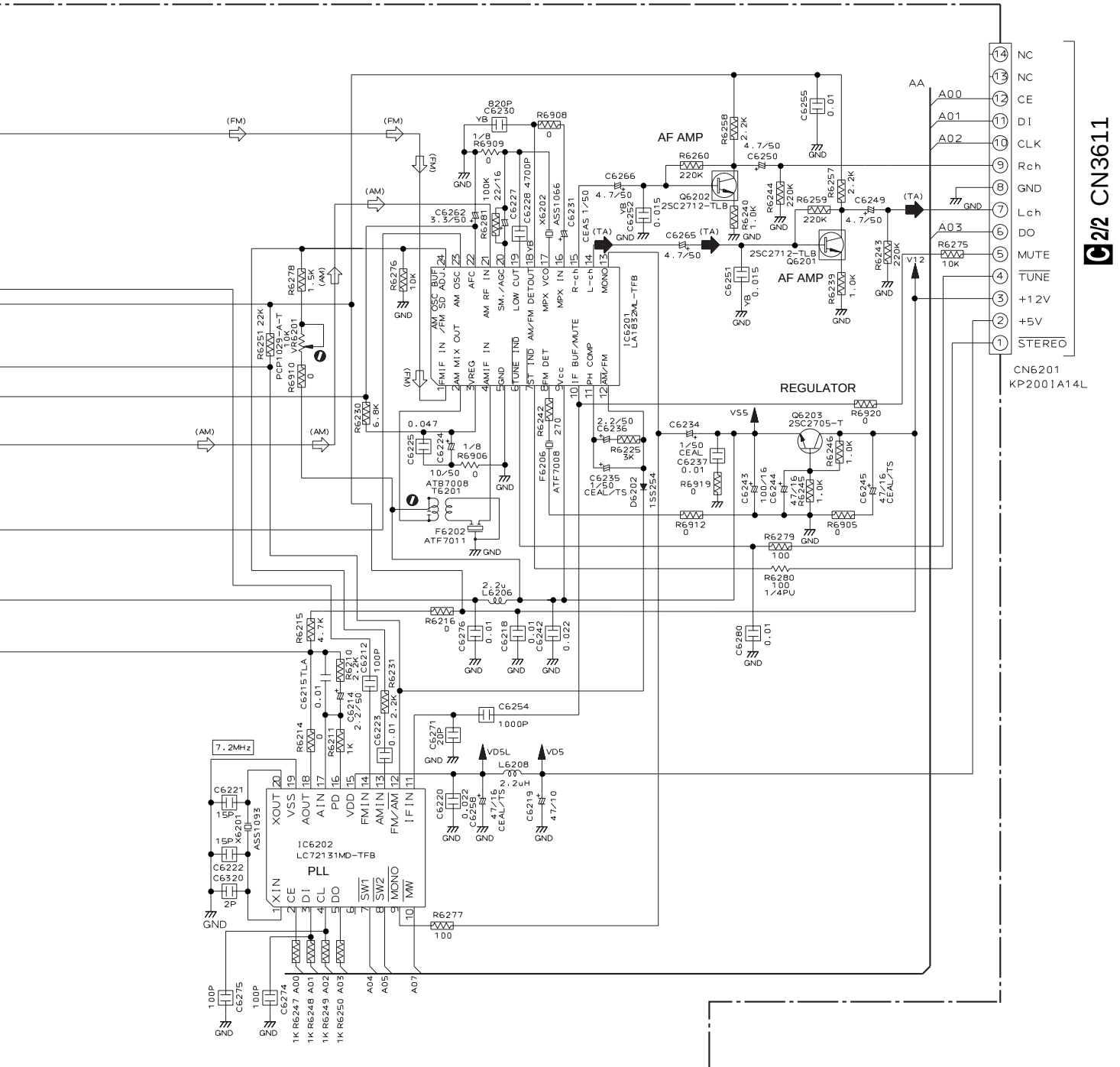
(AM) : AM SIGNAL ROUTE

(FM) : FM SIGNAL ROUTE

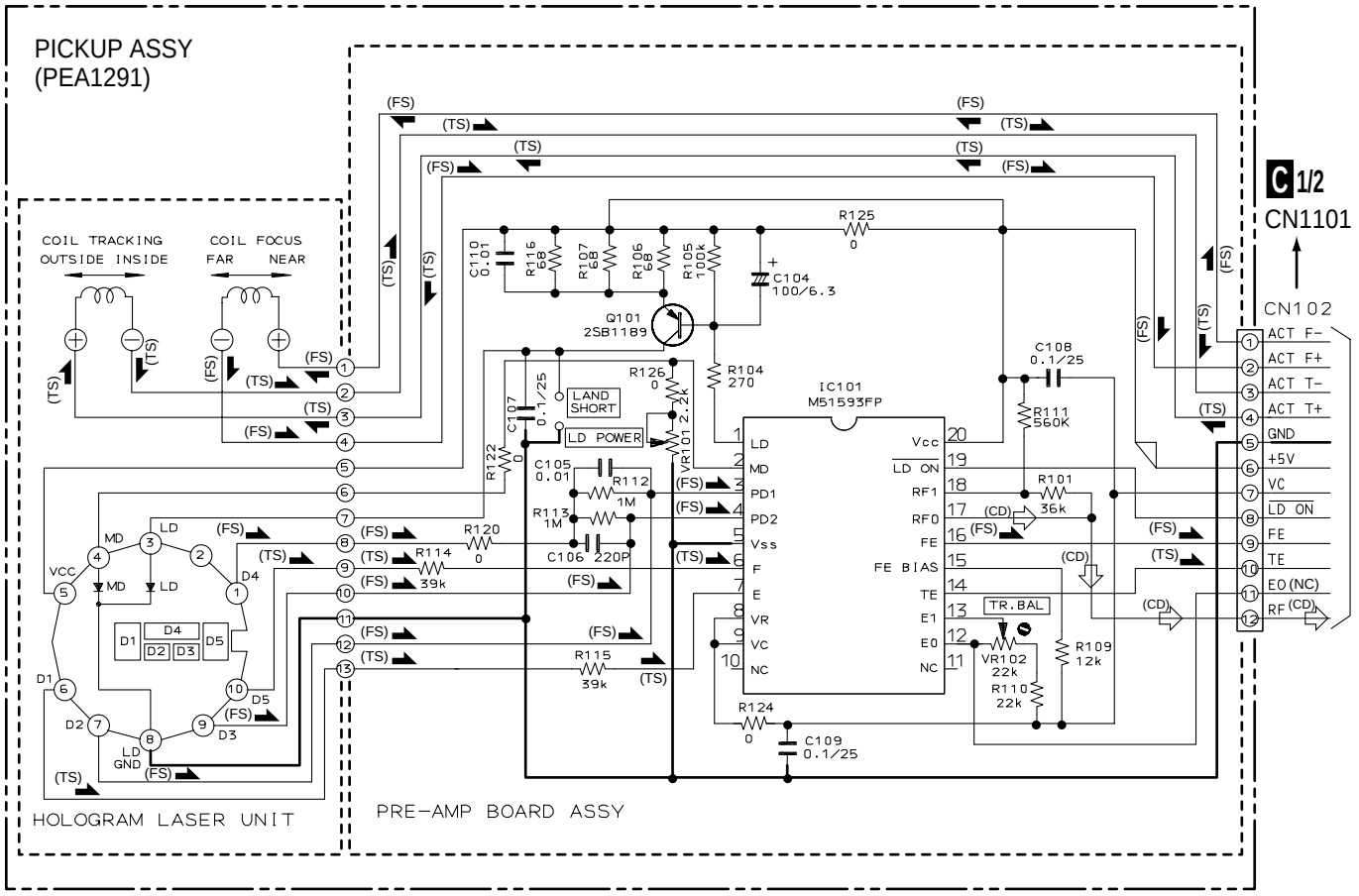
(TA) : TUNER AUDIO SIGNAL ROUTE

Notes

1. RESISTORS
   Indicated in Ω, 1/10W±5% Tolerance unless otherwise noted K:KΩ, M:MΩ.
2. CAPACITORS
   Indicated in Capacity(μF)/VOLTAGE(V) unless otherwise noted P:PF.
3. DIODES
   No mark diode is 1SS254.



3.3 PICKUP ASSY



SIGNAL ROUTE

(CD) :CD AUDIO SIGNAL ROUTE

(FS) : FOCUS SERVO LOOP LINE

(TS) : TRACKING SERVO LOOP LINE

• WAVEFORMS OF CD MAIN UNIT

Note: The encircled numbers denote measuring points in the schematic diagram.

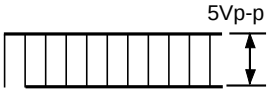
∗1 50T-JUMP: After switching to the pause mode, press the manual search key.
∗2 FOCUS-IN: Press the play key without loading a disc.

(2) TP1- Pin 1 :
PLAY MODE (RF)
H : 500nsec/div

(5) IC1201- Pin 3 :
PLAY MODE (FODR)
H : 1msec/div

(8) IC1202- Pin 3 :
TRACK SEARCH
MODE (CADR)
H : 200msec/div

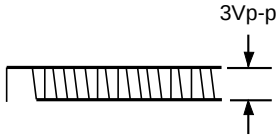
(19) IC1301- Pin 52 :
PLAY MODE (1kHz)
(PCMD)
H : 500nsec/div



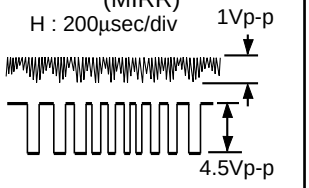
(2) TP1- Pin 1 :
TRACK SEARCH
MODE (RF)
H : 200µsec/div

(6) IC1201- Pin 1 :
PLAY MODE (TRDR)
H : 1msec/div

(9) IC1101- Pin 32 :
PLAY MODE (EFM)
H : 500nsec/div

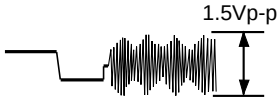


(23) TRACK SEARCH MODE
Upper:TP1-Pin1(RF)
Lower:IC1101-Pin 29
(MIRR)
H : 200µsec/div

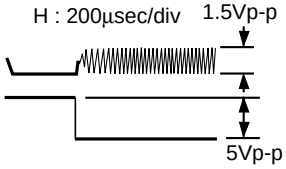


(3) TP1- Pin 6 :
PLAY MODE (FOER)
H : 10msec/div

(6) IC1201- Pin 1 :
50T-JUMP(∗1) MODE
(TRDR)
H : 1msec/div

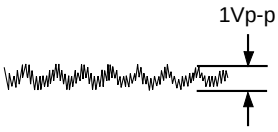


(24) PLAY MODE
Upper:TP1-Pin1(RF)
Lower:IC1101-Pin 30
(DFCT)
H : 200µsec/div

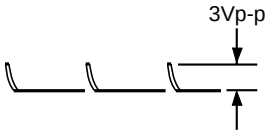


(4) TP1- Pin 2 :
PLAY MODE (TRER)
H : 10msec/div

(7) IC1202- Pin 4 :
PLAY MODE (SPDR)
H : 50msec/div



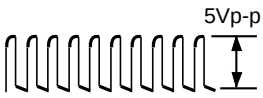
(33) IC1301- Pin 27 :
PLAY MODE (MDP)
H : 2µsec/div



(4) TP1- Pin 2 :
50T- JUMP(∗1)MODE
(TRER)
H : 1msec/div

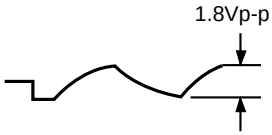
(7) IC1202- Pin 4 :
TRACK SEARCH
MODE (SPDR)
H : 50msec/div

(16) IC1301- Pin 54 :
PLAY MODE (1kHz)
(BCLK)
H : 500nsec/div

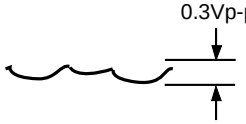


(53) IC1301- Pin 38 :
PLAY MODE
(PCO)
H : 10µsec/div

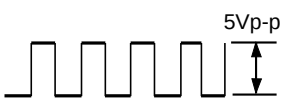
(5) IC1201- Pin 3 :
FOCUS-IN(∗2) MODE
(FODR)
H : 200msec/div



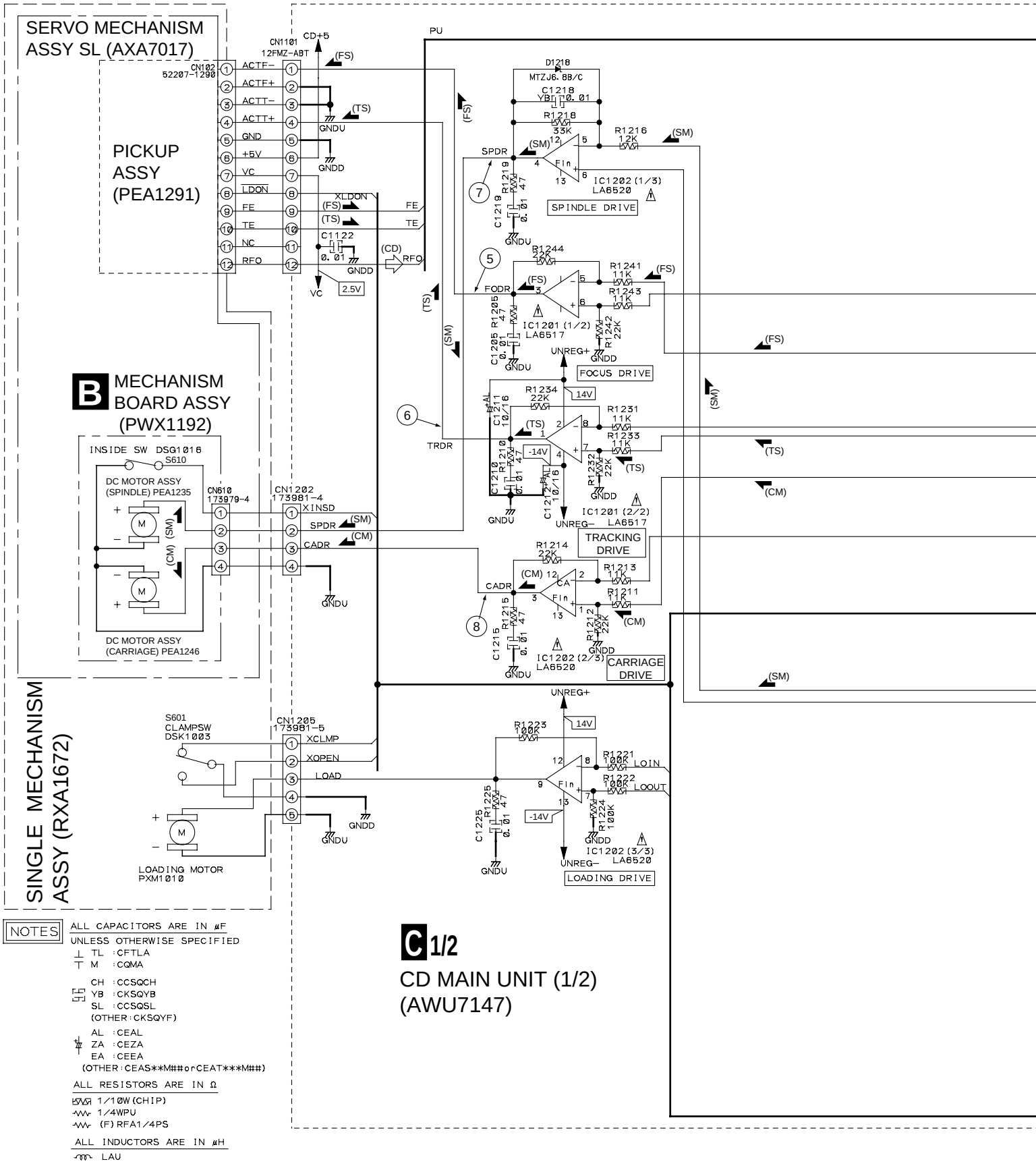
(8) IC1202- Pin 3 :
PLAY MODE (CADR)
H : 2sec/div



(18) IC1301- Pin 50 :
PLAY MODE (1kHz)
(LRCK)
H : 10µsec/div



3.4 MECHANISM BOARD ASSY AND CD MAIN UNIT(1/2)



NOTES

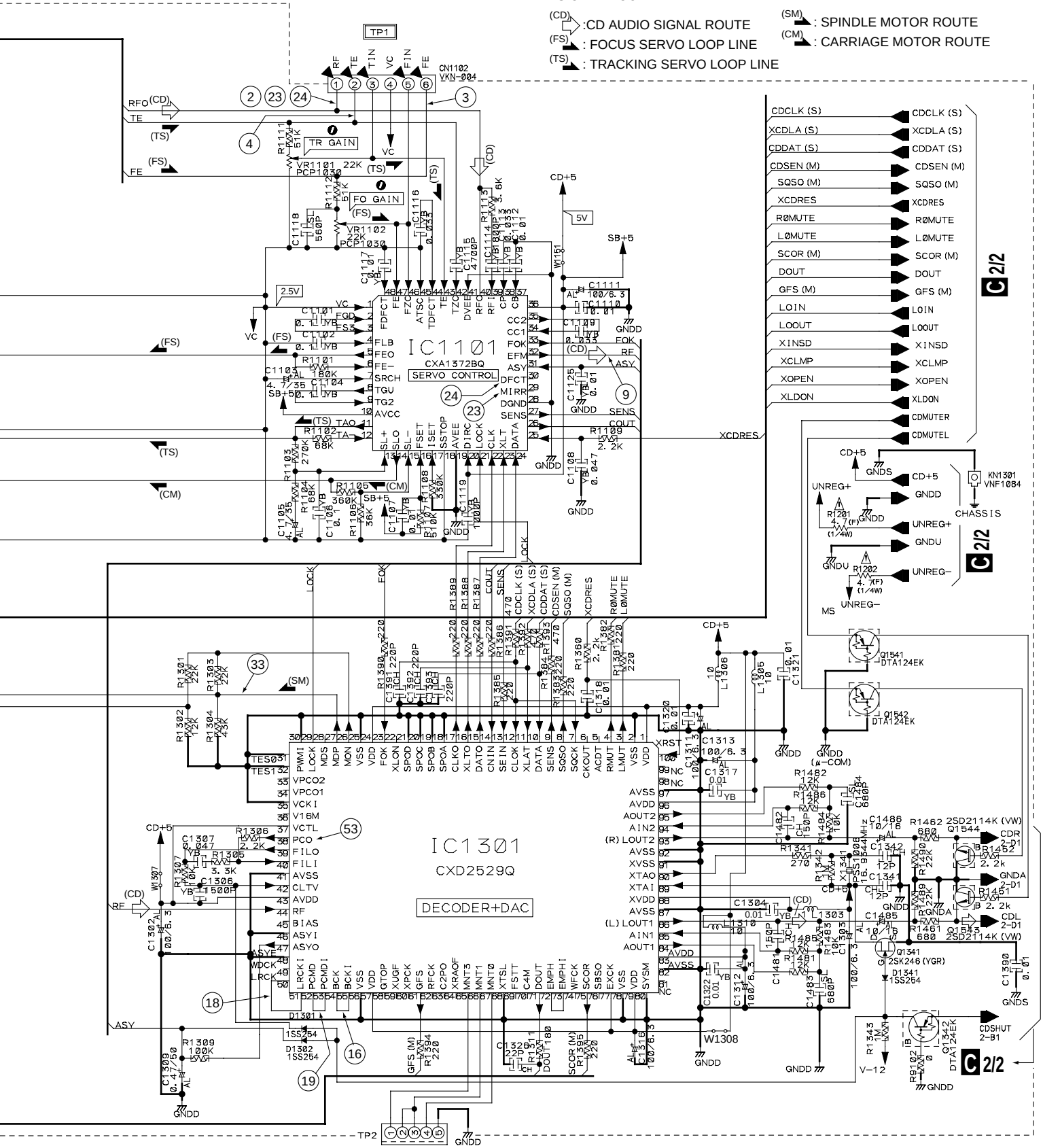
ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIED
TL : CFTLA
M : CQMA
CH : CCSQCH
YB : CKSQYB
SL : CCSQSL
(OTHER : CKSQYF)
AL : CEAL
ZA : CEZA
EA : CEEA
(OTHER : CEAS**M##orCEAT***M##)

ALL RESISTORS ARE IN Ω
1/10W (CHIP)
1/4WPU
(F) RFA1/4PS

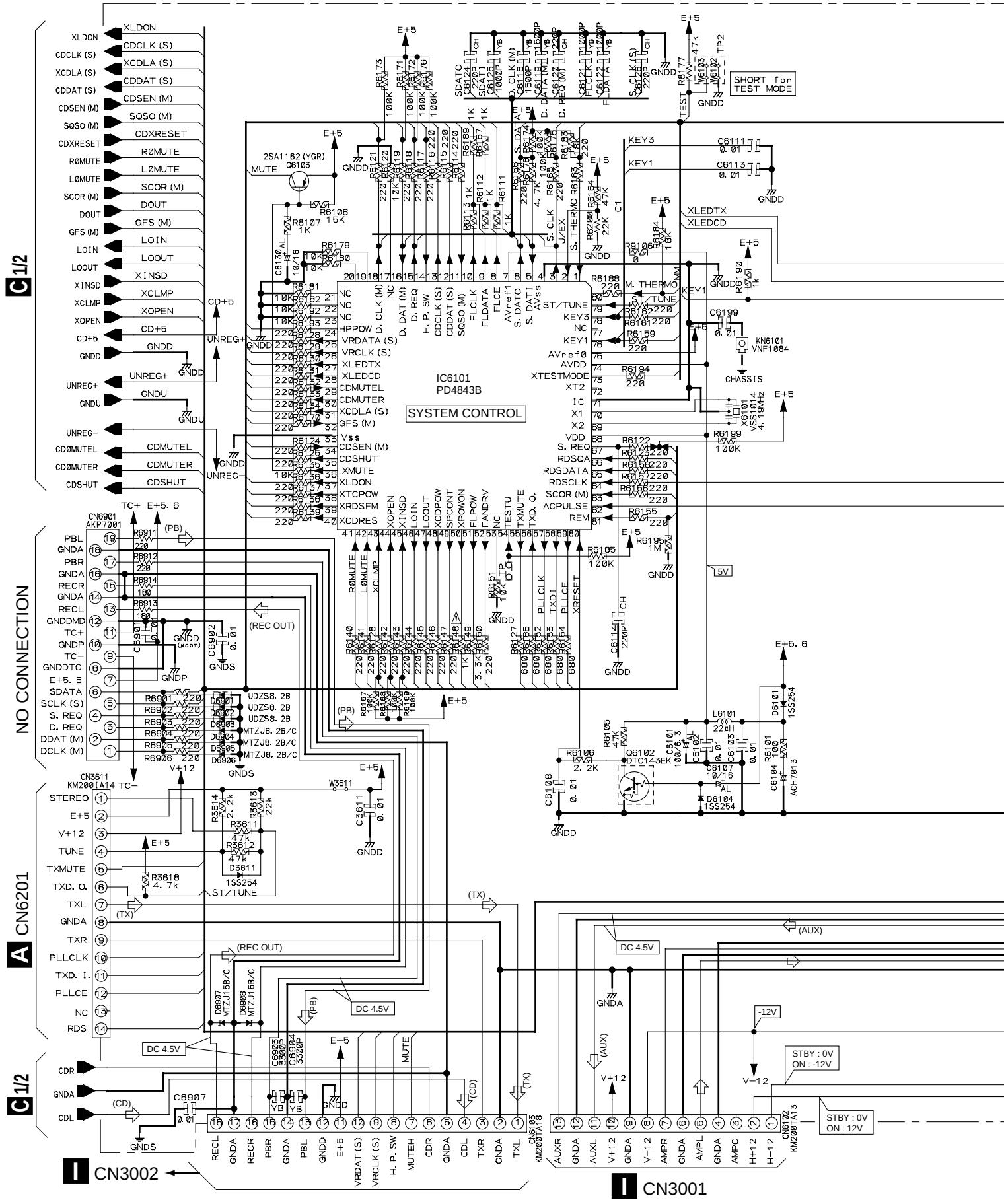
ALL INDUCTORS ARE IN μH
LAU

SIGNAL ROUTE

(CD) :CD AUDIO SIGNAL ROUTE
(FS) : FOCUS SERVO LOOP LINE
(TS) : TRACKING SERVO LOOP LINE
(SM) : SPINDLE MOTOR ROUTE
(CM) : CARRIAGE MOTOR ROUTE

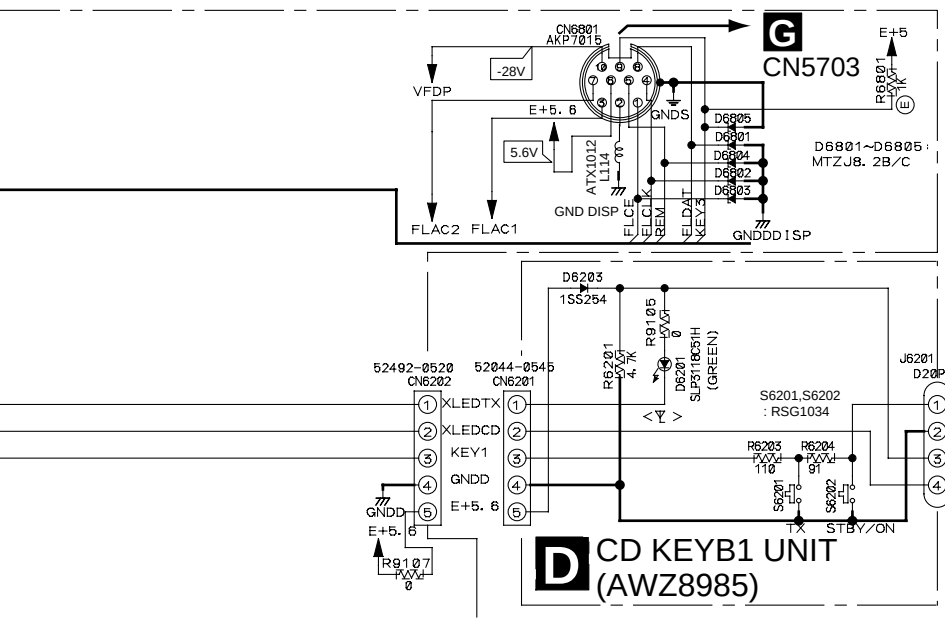


3.5 CD MAIN (2/2), CD KEYB1 AND CD KEYB2 UNITS



SIGNAL ROUTE

(AUX) : LCH AUDIO SIGNAL ROUTE
(AUX) : AUX AUDIO SIGNAL ROUTE
(PB) : DECK PB SIGNAL ROUTE
(REC OUT) : DECK REC SIGNAL ROUTE
(TX) : TUNER AUDIO SIGNAL ROUTE
(CD) : CD AUDIO SIGNAL ROUTE



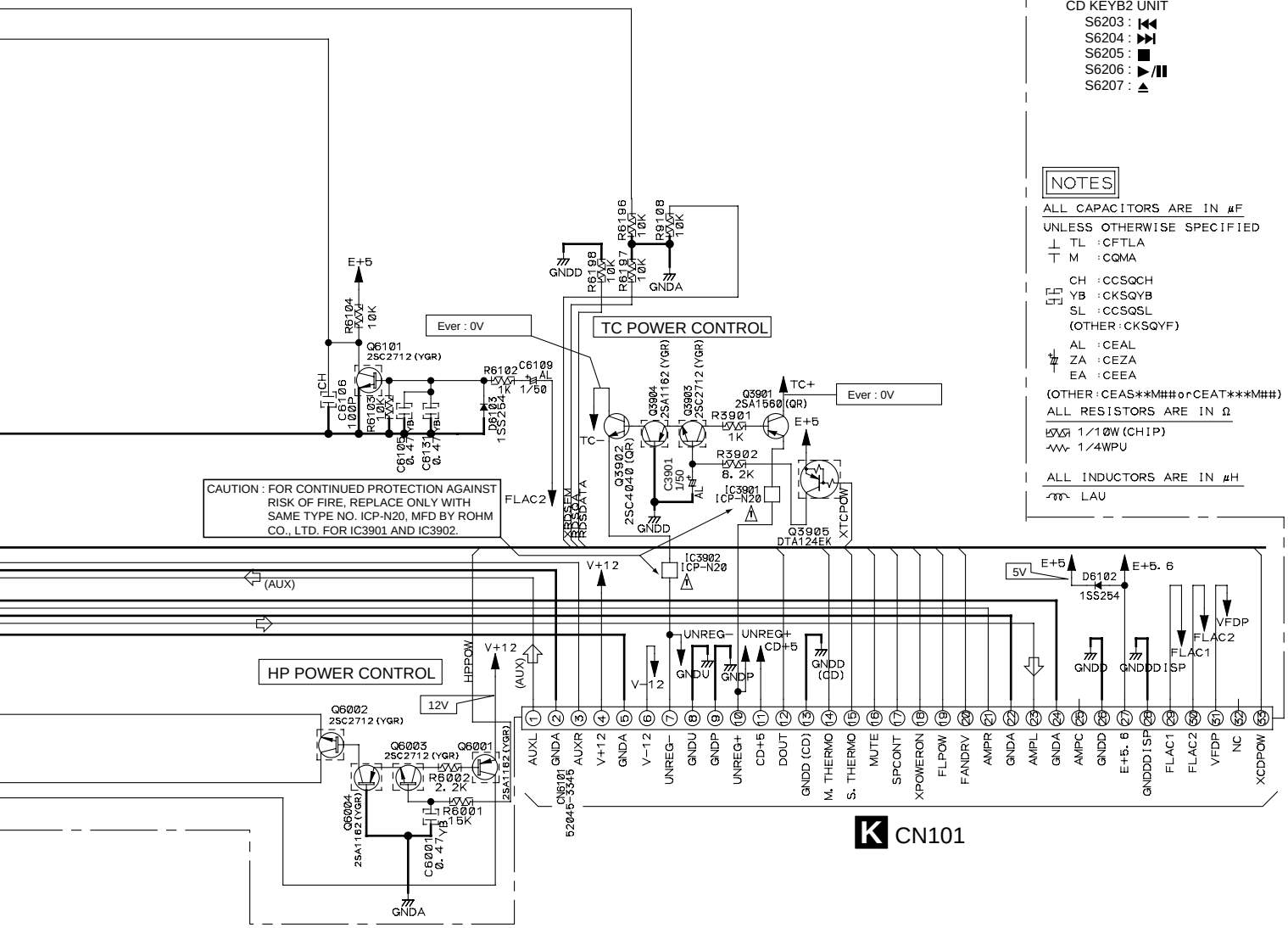
C 2/2 CD MAIN UNIT (2/2)
(AWU7147)

CD KEYB1 UNIT
S6201 :
S6202 : STANDBY/ON

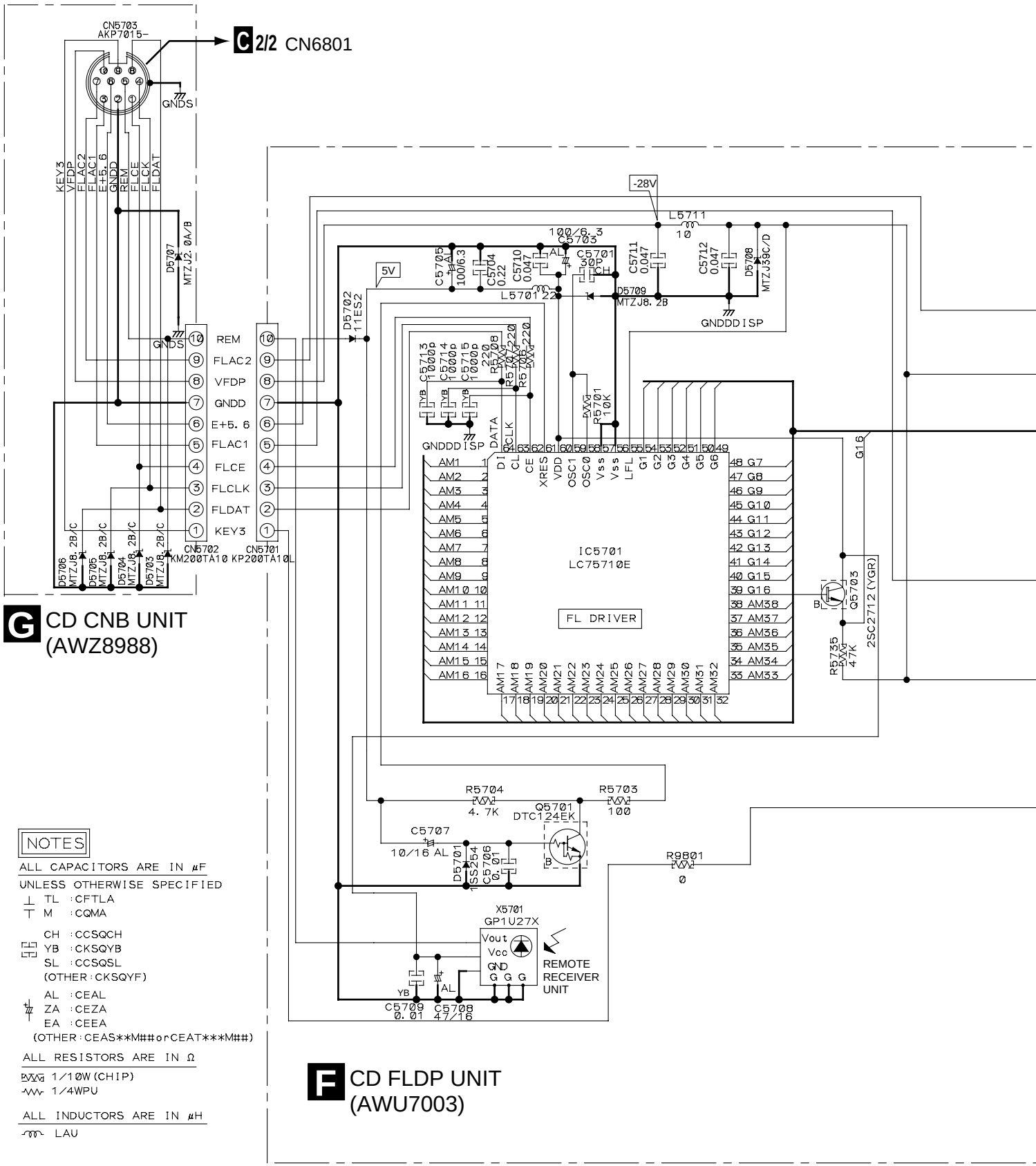
CD KEYB2 UNIT
S6203 :
S6204 :
S6205 :
S6206 :
S6207 :

NOTES

ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIED
TL : CFTLA
M : CQMA
CH : CCSQCH
YB : CKSQYB
SL : CCSQSL
(OTHER : CKSQYF)
AL : CEAL
ZA : CEZA
EA : CEEA
(OTHER : CEAS**M##orCEAT***M##)
ALL RESISTORS ARE IN Ω
1/10W (CHIP)
1/4WPU
ALL INDUCTORS ARE IN μH
LAU



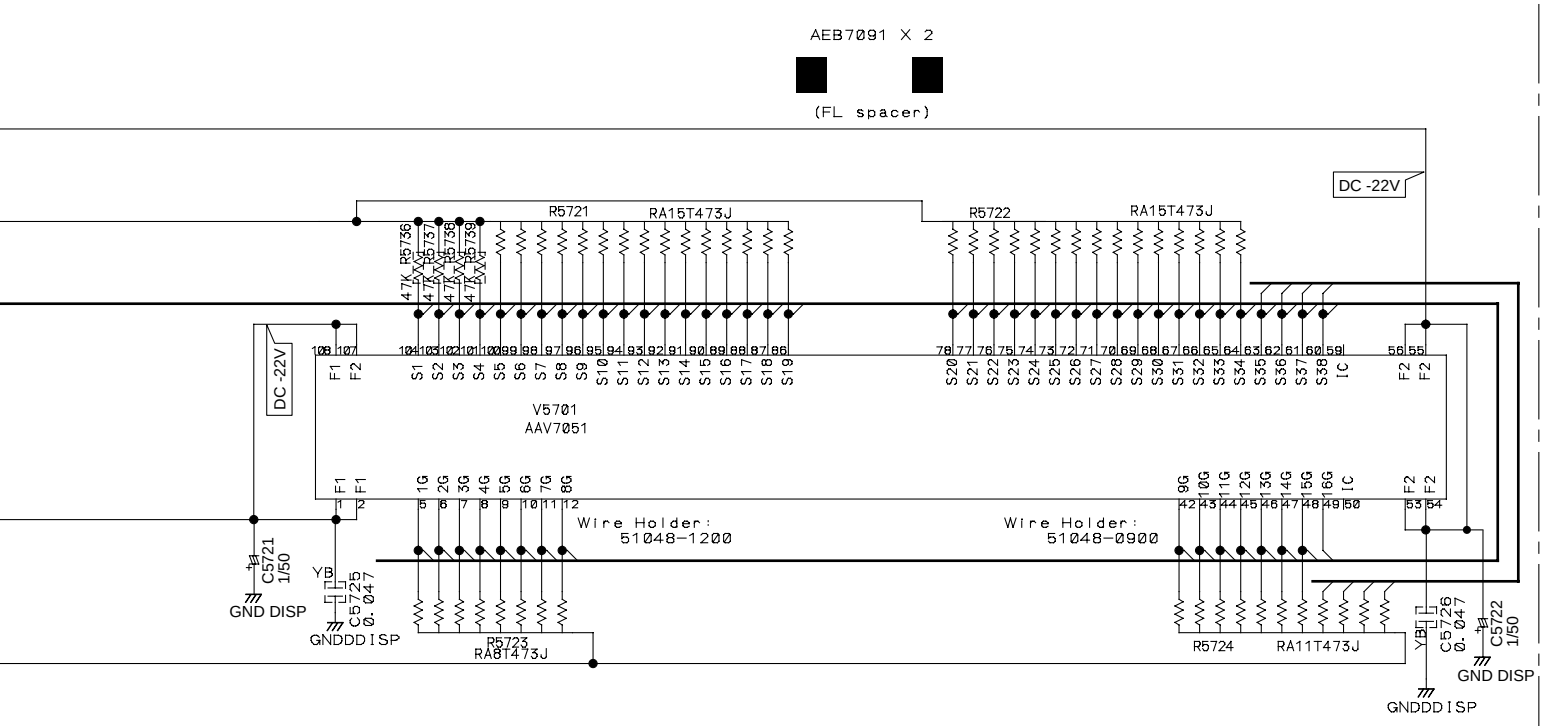
3.6 CD FLDP, CD CNB AND CD DPKEY UNITS

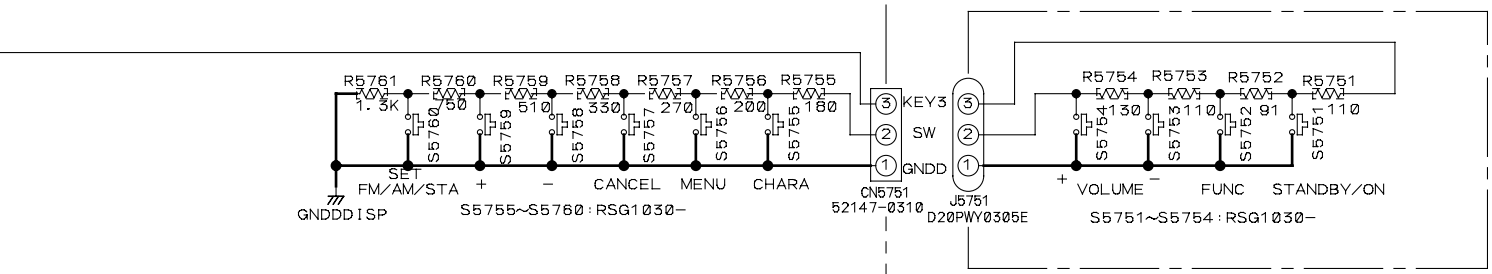


CD FLDP UNIT
- S5755 : CHARACTER
- S5756 : MENU
- S5757 : CANCEL (■)
- S5758 : – (⏮)
- S5759 : + (⏭)
- S5760 : SET FM/AM/STATION

CD DPKEY UNIT
- S5751 : STANDBY/ON
- S5752 : FUNCTION (PLAY)
- S5753 : ∨
- S5754 : ∧

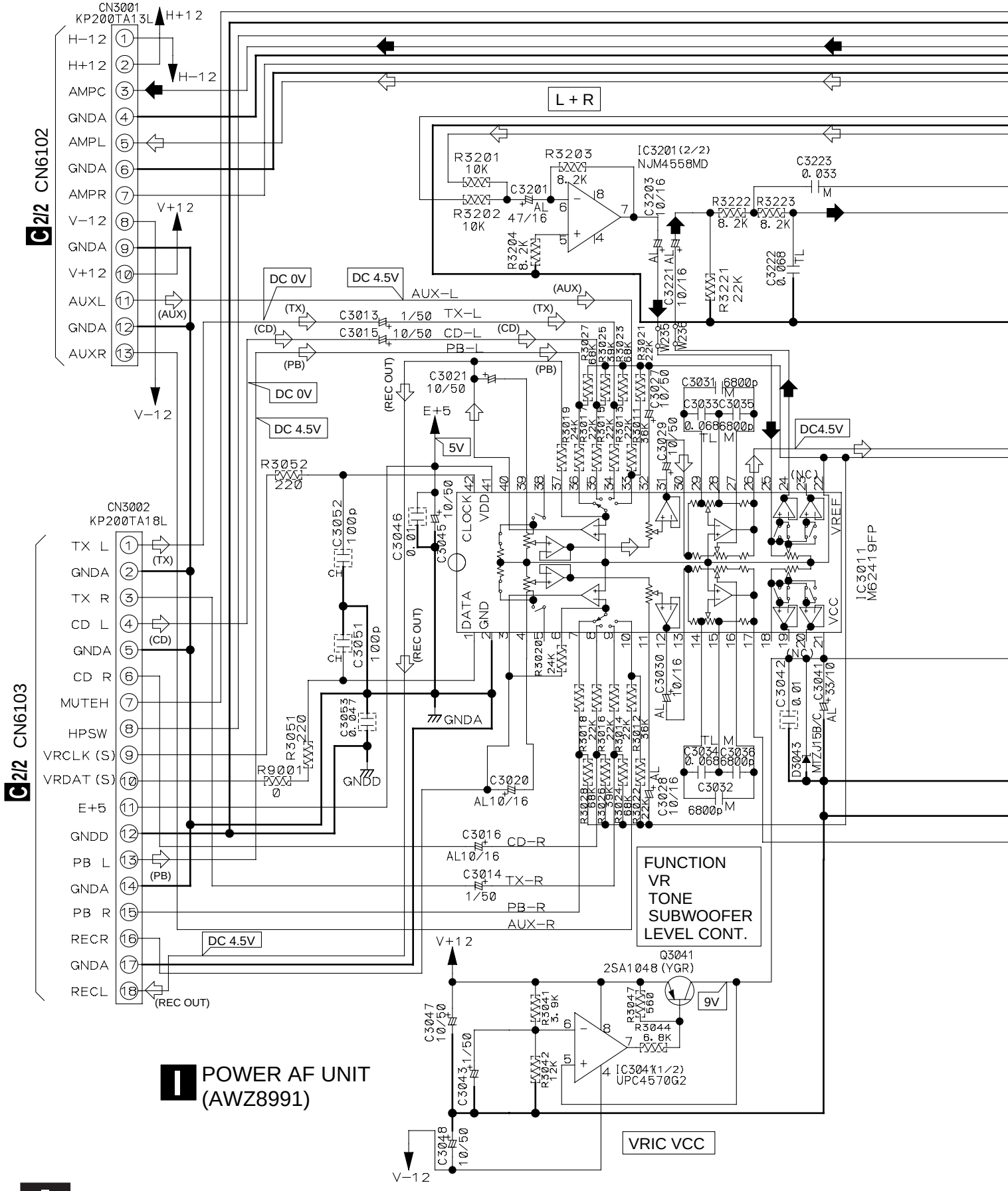
VOLUME



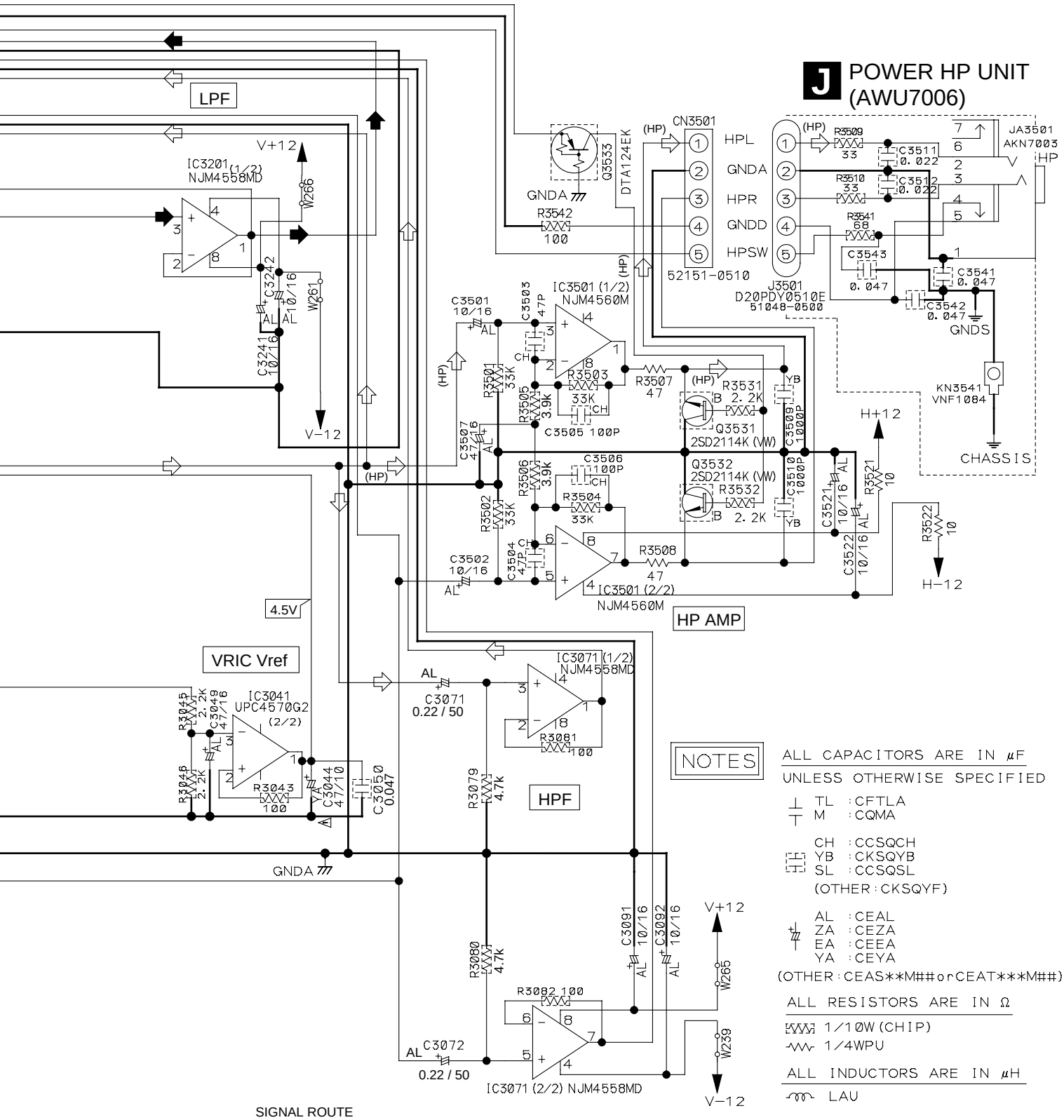


CD DPKEY UNIT (AWZ8989)

3.7 POWER AF AND POWER HP UNITS



J POWER HP UNIT (AWU7006)



NOTES

ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIED

- TL : CFTLA
- M : CQMA
- CH : CCSQCH
- YB : CKSQYB
- SL : CCSQSL
- (OTHER : CKSQYF)
- AL : CEAL
- ZA : CEZA
- EA : CEEA
- YA : CEYA
- (OTHER : CEAS**M##orCEAT***M##)

ALL RESISTORS ARE IN Ω

- 1/10W (CHIP)
- 1/4WPU

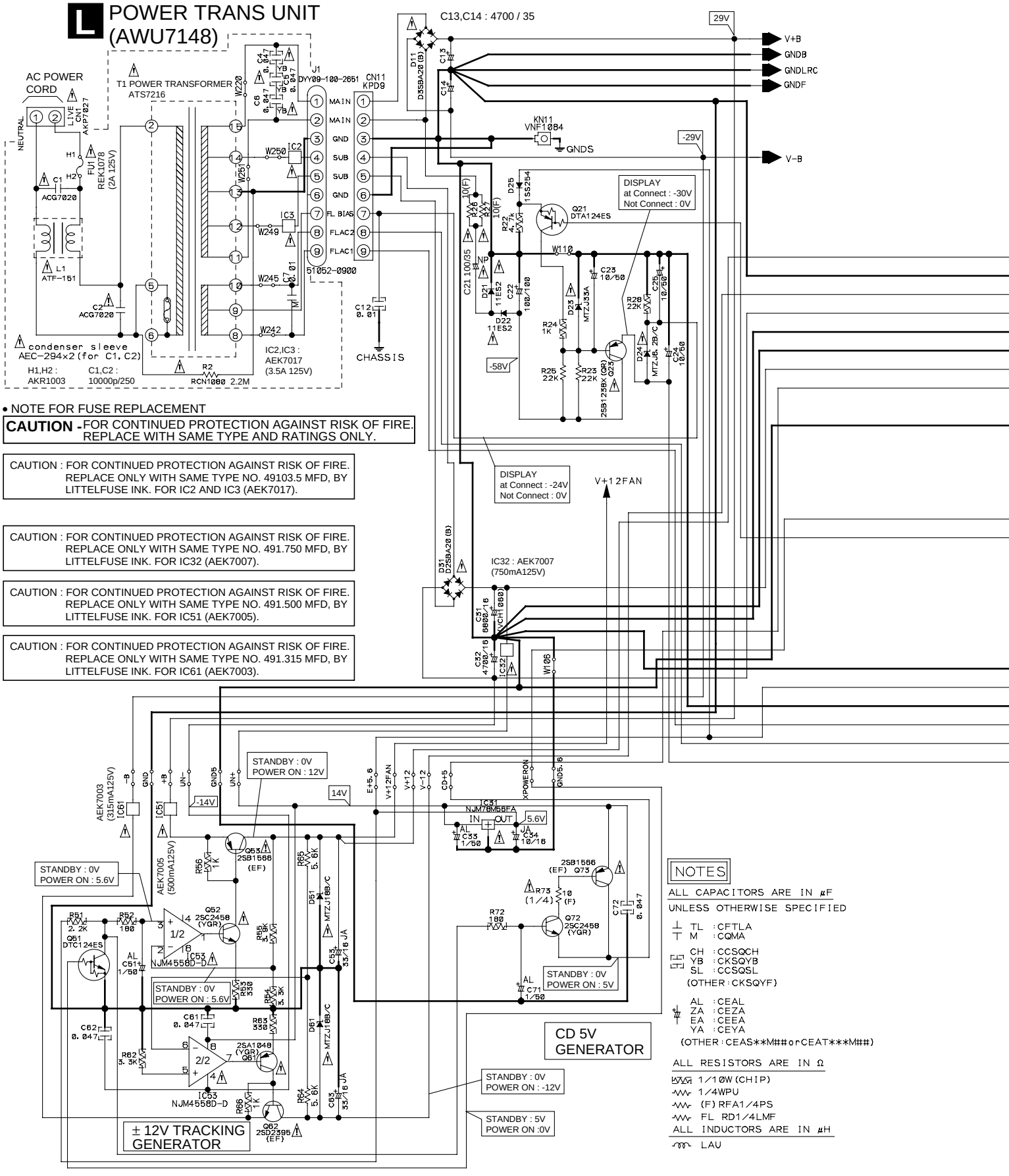
ALL INDUCTORS ARE IN μH

- LAU

SIGNAL ROUTE

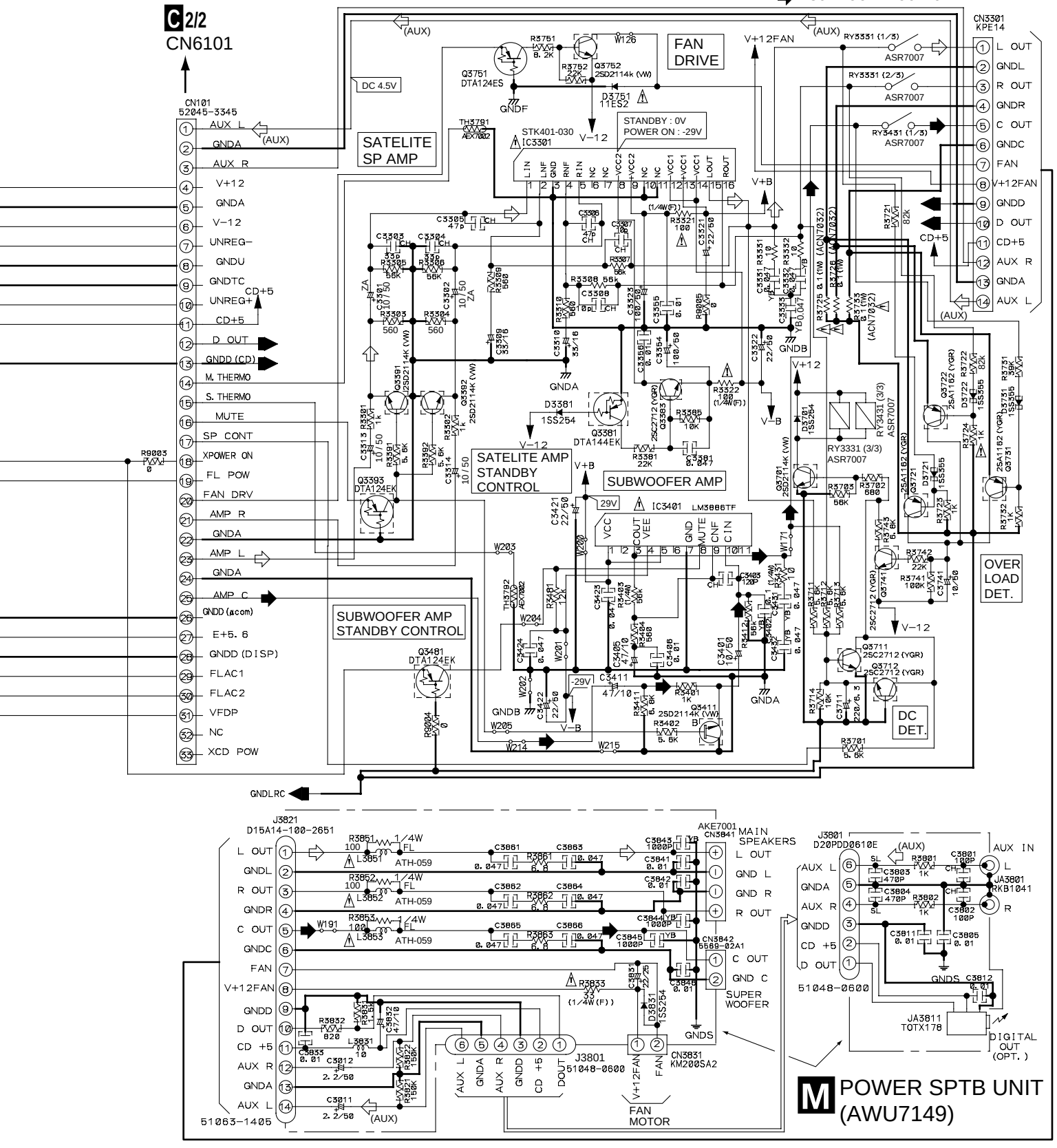
- : LCH AUDIO SIGNAL ROUTE
- (AUX) : AUX AUDIO SIGNAL ROUTE
- (PB) : DECK PB SIGNAL ROUTE
- (REC OUT) : DECK REC SIGNAL ROUTE
- (TX) : TUNER AUDIO SIGNAL ROUTE
- (CD) : CD AUDIO SIGNAL ROUTE
- (HP) : H.P AUDIO SIGNAL ROUTE
- : SUBWOOFER OUTPUT

3.8 POWER AMP, POWER TRANS AND POWER SPTB UNITS


POWER TRANS UNIT
(AWU7148)
AC POWER CORD
T1 POWER TRANSFORMER
ATS7216
condenser sleeve
AEC-294×2 (for C1, C2)
H1,H2 : AKR1003
C1,C2 : 10000p/250
IC2,IC3 : AEK7017 (3.5A 125V)
CHASSIS
C13,C14 : 4700 / 35
29V
V+B
GNDB
GNDLRC
GNDF
-29V
V-B
GNDS
DISPLAY at Connect : -30V Not Connect : 0V
DISPLAY at Connect : -24V Not Connect : 0V
-58V
V+12FAN
IC32 : AEK7007 (750mA125V)
• NOTE FOR FUSE REPLACEMENT
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS ONLY.
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 49103.5 MFD, BY LITTELFUSE INK. FOR IC2 AND IC3 (AEK7017).
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.750 MFD, BY LITTELFUSE INK. FOR IC32 (AEK7007).
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.500 MFD, BY LITTELFUSE INK. FOR IC51 (AEK7005).
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. 491.315 MFD, BY LITTELFUSE INK. FOR IC61 (AEK7003).
STANDBY : 0V POWER ON : 12V
STANDBY : 0V POWER ON : 5.6V
STANDBY : 0V POWER ON : 5V
STANDBY : 0V POWER ON : -12V
STANDBY : 5V POWER ON :0V
14V
-14V
5.6V
CD 5V GENERATOR
± 12V TRACKING GENERATOR
NOTES
ALL CAPACITORS ARE IN µF
UNLESS OTHERWISE SPECIFIED
TL : CFTLA
M : CQMA
CH : CCSQCH
YB : CKSQYB
SL : CCSQSL
(OTHER : CKSQYF)
AL : CEAL
ZA : CEZA
EA : CEEA
YA : CEYA
(OTHER : CEAS**M##orCEAT***M##)
ALL RESISTORS ARE IN Ω
1/10W (CHIP)
1/4WPU
(F) RFA1/4PS
FL RD1/4LMF
ALL INDUCTORS ARE IN µH
LAU

K POWER AMP UNIT(AWZ8990)

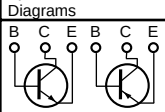
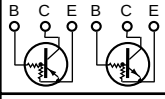
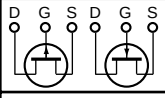
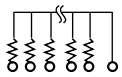
SIGNAL ROUTE
: LCH AUDIO SIGNAL ROUTE
(AUX) : AUX AUDIO SIGNAL ROUTE
: SUBWOOFER OUTPUT



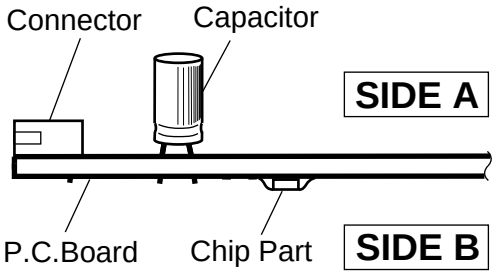
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

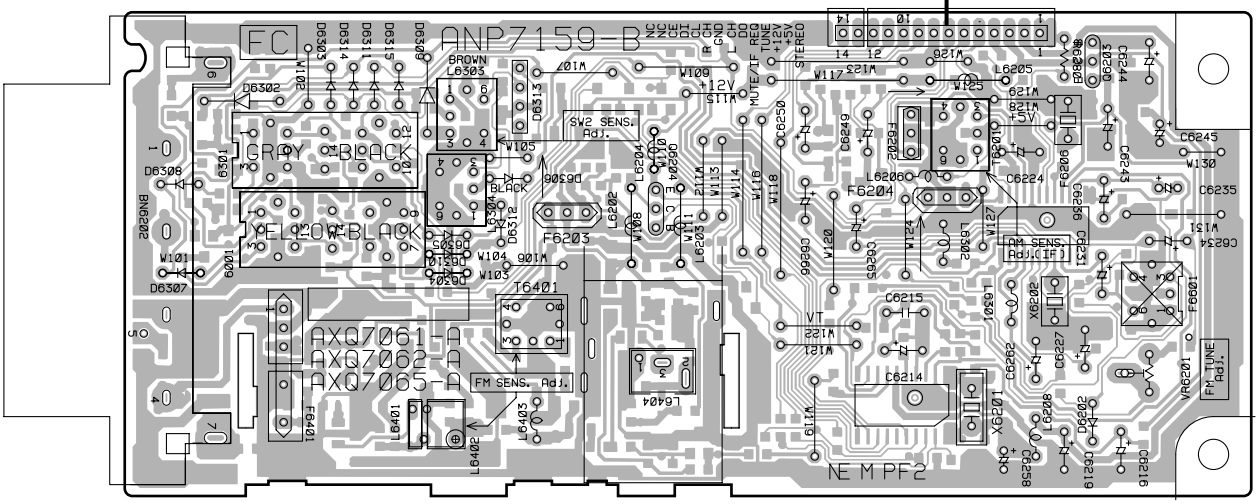
3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



4.1 FM/AM TUNER MODULE

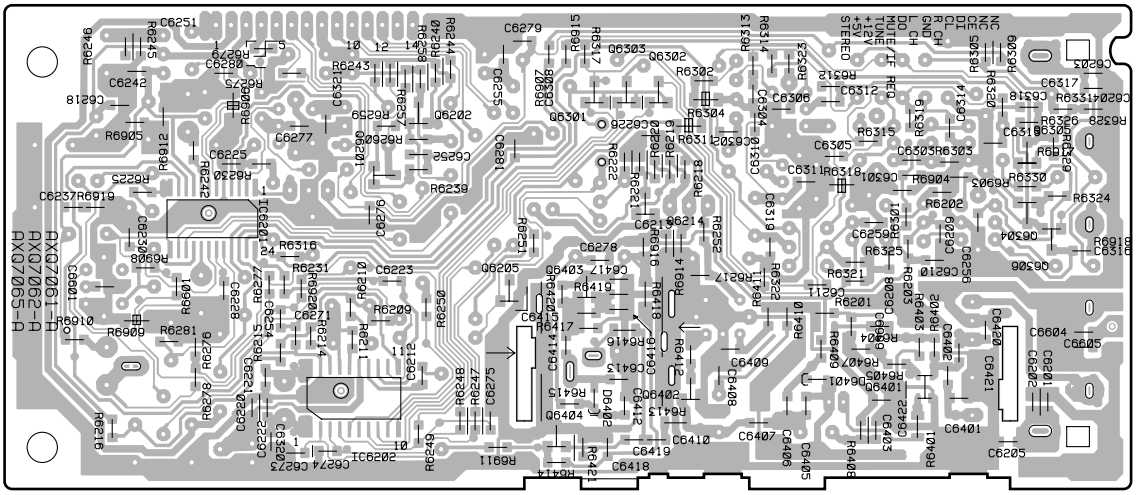
C CN3611

A FM/AM TUNER MODULE



SIDE A

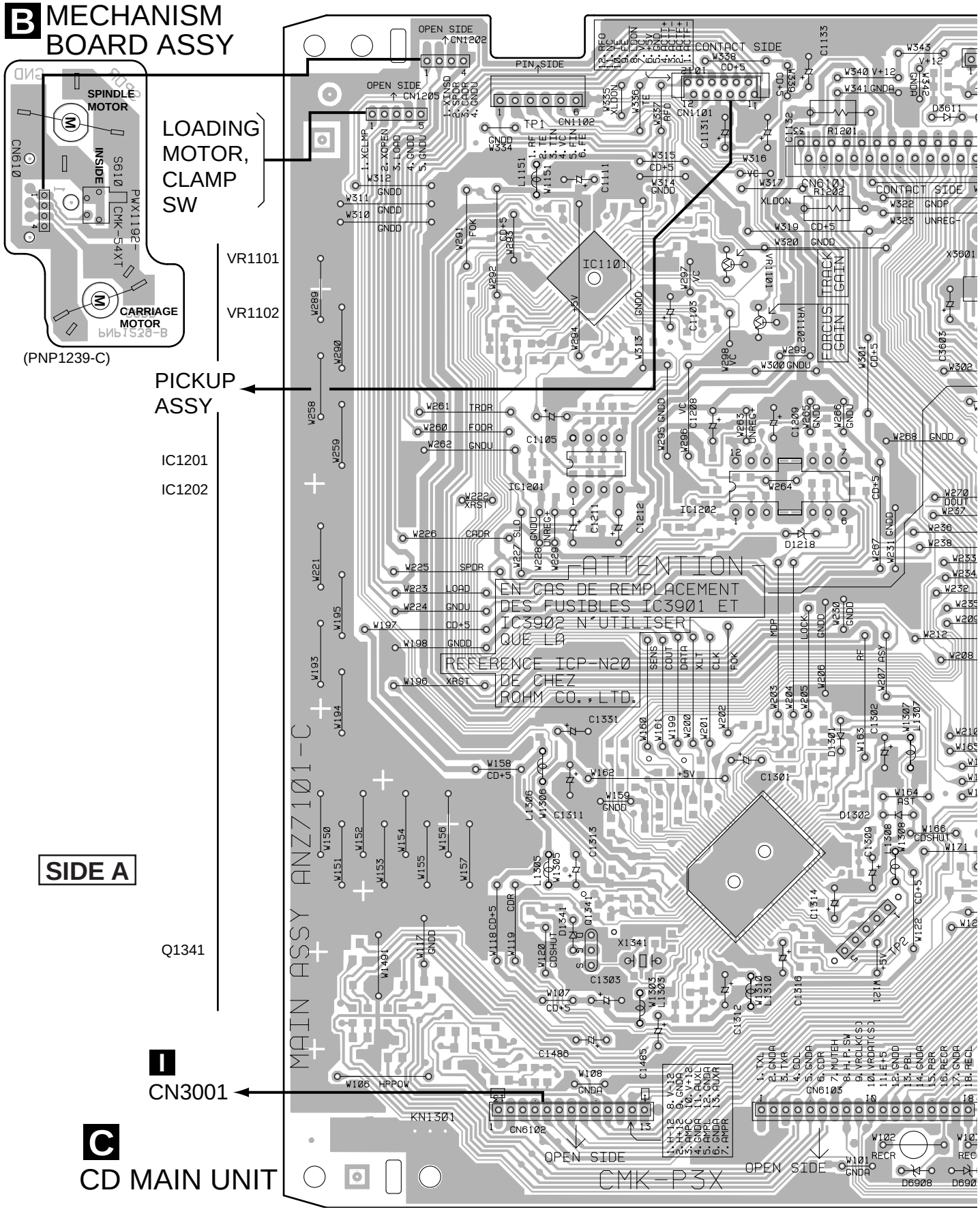
A FM/AM TUNER MODULE

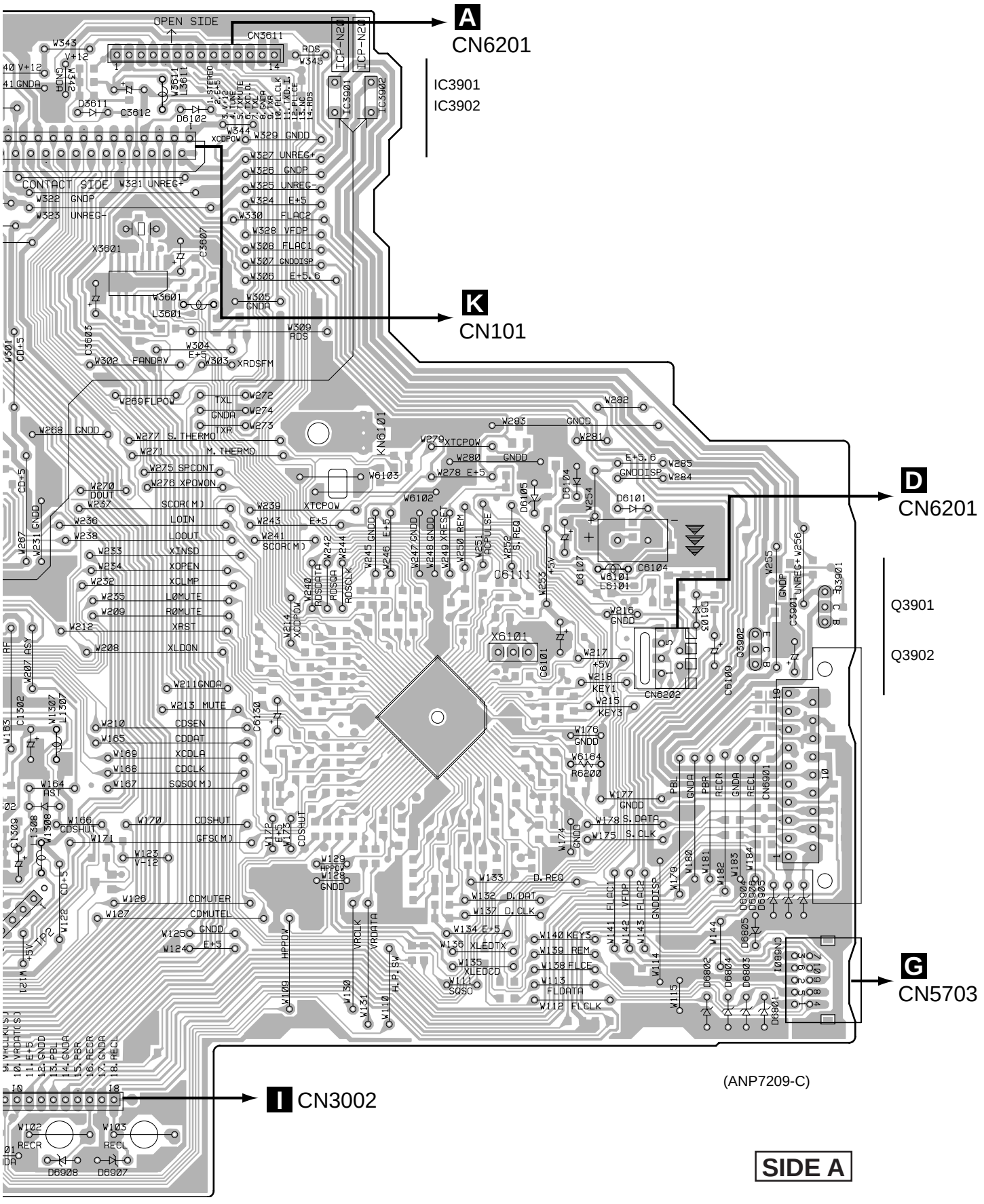


SIDE B

(ANP7159-B)

4.2 MECHANISM BOARD ASSY AND CD MAIN UNIT




A
CN6201
IC3901
IC3902
K
CN101
D
CN6201
Q3901
Q3902
G
CN5703
I
CN3002
OPEN SIDE
CONTACT SIDE
CN3611
W343
W344
W345
W321 UNREG+
W322 GNDP
W323 UNREG-
W324 E+5
W325 UNREG-
W326 GNDP
W327 UNREG+
W328 VFDP
W329 GNDD
W330 FLAC2
W305 GNDA
W306 E+5.6
W307 GNDDISP
W308 FLAC1
W309 RDS
W301 CD+5
W302 FANDRV
W303 XRDSFM
W304 E+5
W269FLPOW
W268 GNDD
W277 S.THERMO
W271 M.THERMO
W275 SPCONT
W276 XPOWON
W270 DOUT
W237 SCOR(M)
W236 LOIN
W238 LOOUT
W233 XINSD
W234 XOPEN
W232 XOLMP
W235 L0MUTE
W209 R0MUTE
W212 XRST
W208 XLDON
W211GNDA
W213 MUTE
W210 CDSEN
W165 CDDAT
W169 XCDLA
W168 CDCLK
W167 SQSO(M)
W164 RST
W166 CDSHUT
W170 CDSHUT
W171 GFS(M)
W126 COMUTER
W127 COMUTEL
W125 GNDD
W124 E+5
W123 V-12
W122
W121
W129 HPPOW
W128 GNDD
W109 HPPOW
W130 VRCLK
W131 VRDATA
W110 FLP;SW
W102 RECR
W103 RECL
D6908
D6907
W279 XTCPOW
W280 GNDD
W278 E+5
W283 GNDD
W282
W281
E+5.6
GNDDISP
W285
W284
W6103
W6102
W239 XTCPOW
W243 E+5
W241 SCOR(M)
W240 RDSDATA
W242 RDSOA
W244 RDSCLK
W245 GNDD
W246 E+5
W247 GNDD
W248 GNDD
W249 XRESET
W250 REM
W251 RCPULSE
W252 S.REQ
W253 +5V
W254
D6105
D6104
D6101
C6111
C6107
W6101
L6101
C6104
W255
W256
GNDP
UNREG+
C3901
W216
GNDD
D6103
X6101
C6101
W217
+5V
W218
KEY1
W215
KEY3
CN6202
C6109
Q3902
W176
GNDD
W6164
R6200
W177
GNDD
W178 S.DATA
W175 S.CLK
W174
GNDD
W133 D.REQ
W132 D.DAT
W137 D.CLK
W134 E+5
W136 XLEDTX
W135 XLEDCD
W111 SQSO
W140 KEY3
W139 REM
W138 FLCE
W113 FLDATA
W112 FLCLK
W141 FLAC1
W142 VFDP
W143 FLAC2
W144 GNDDISP
W114
W115
W179
W180
W181
W182
W183
W184
PBL
GNDA
PBR
RECR
GNDA
RECL
CN6901
D6904
D6905
D6805
D6802
D6804
D6803
D6801
CN6801
(ANP7209-C)
SIDE A

IC3601

Q3601

Q3905

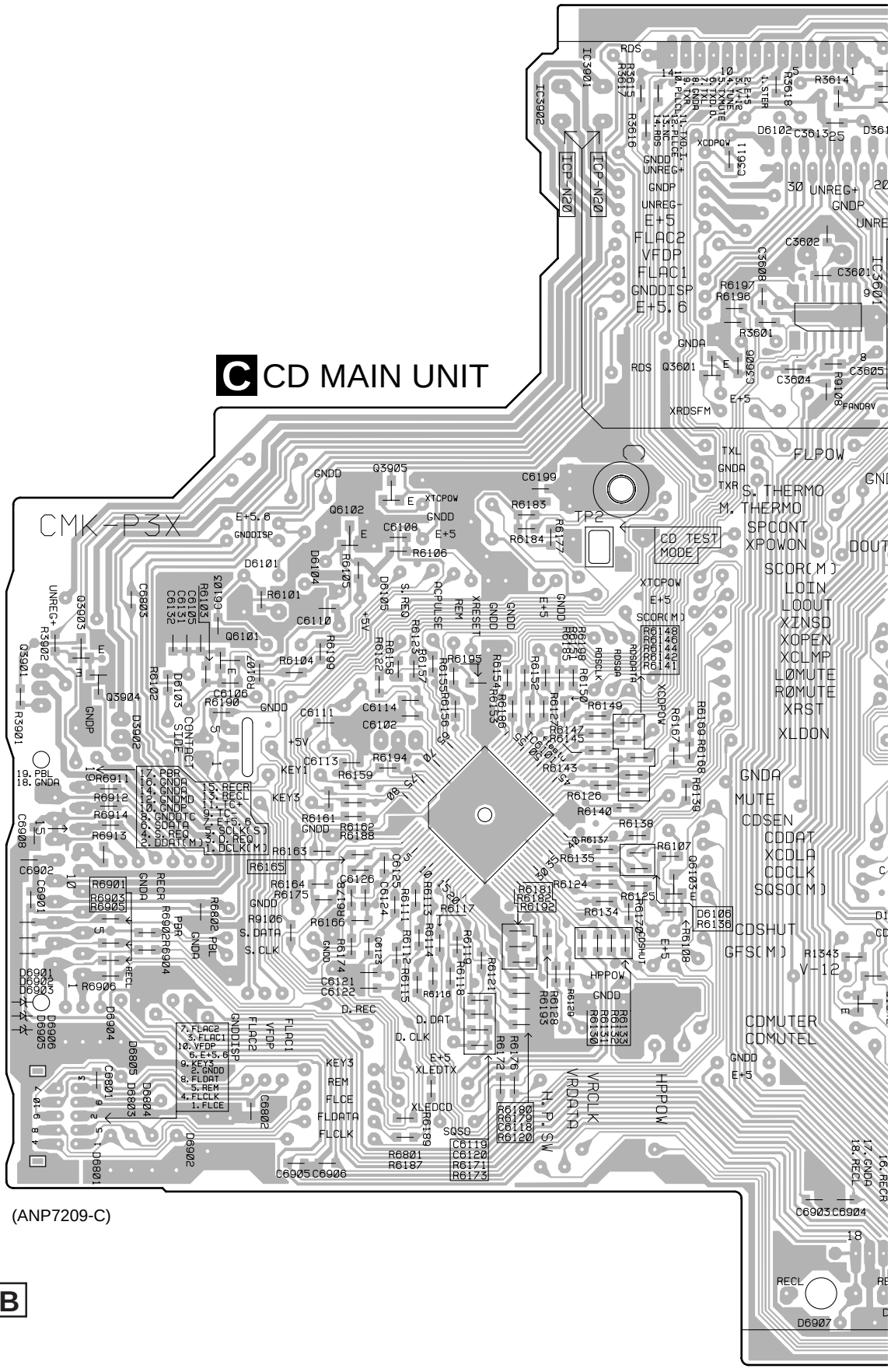
Q6102

Q3903
Q6101
Q3904

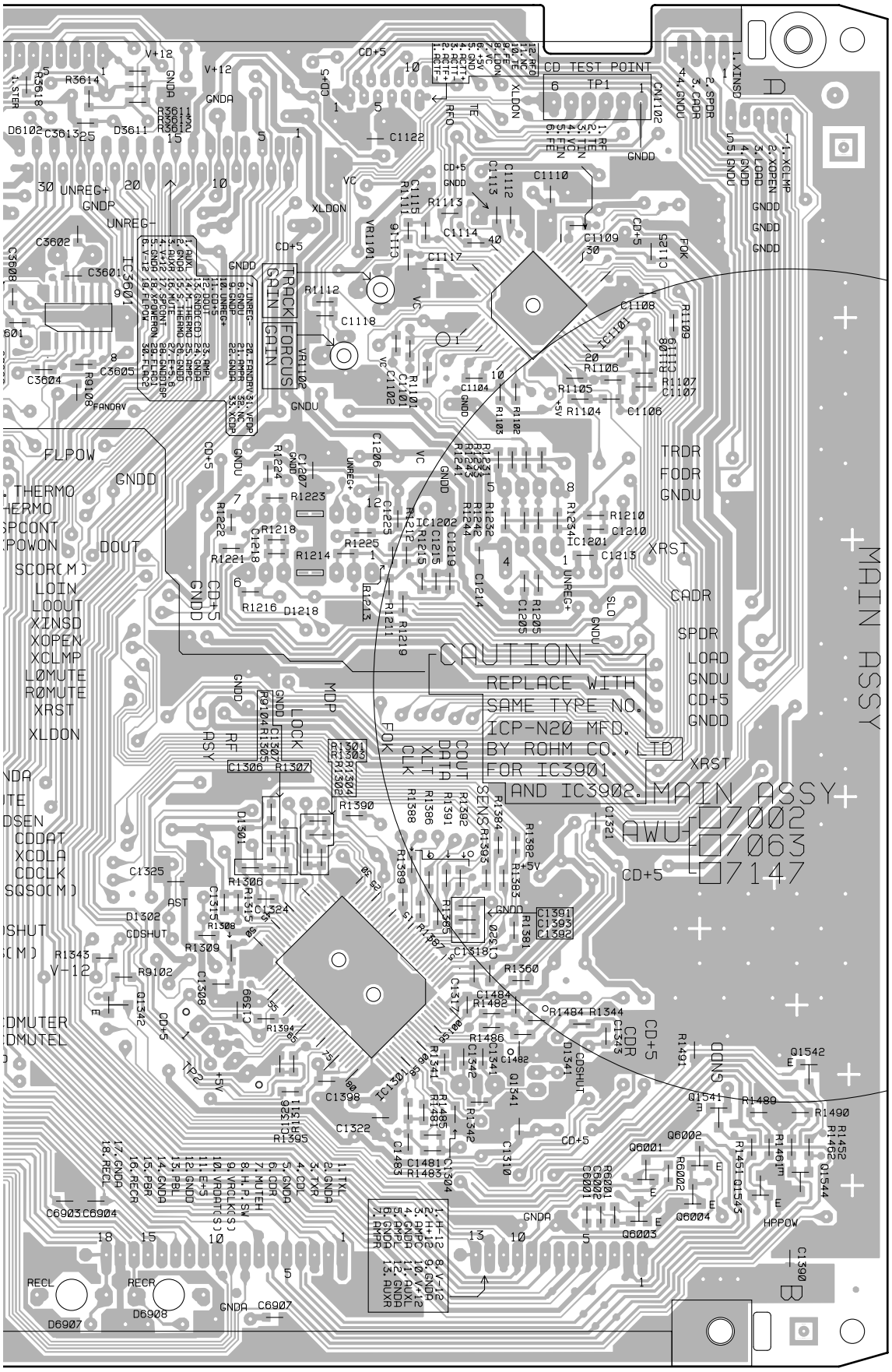
IC6101

Q6103

C CD MAIN UNIT



SIDE B

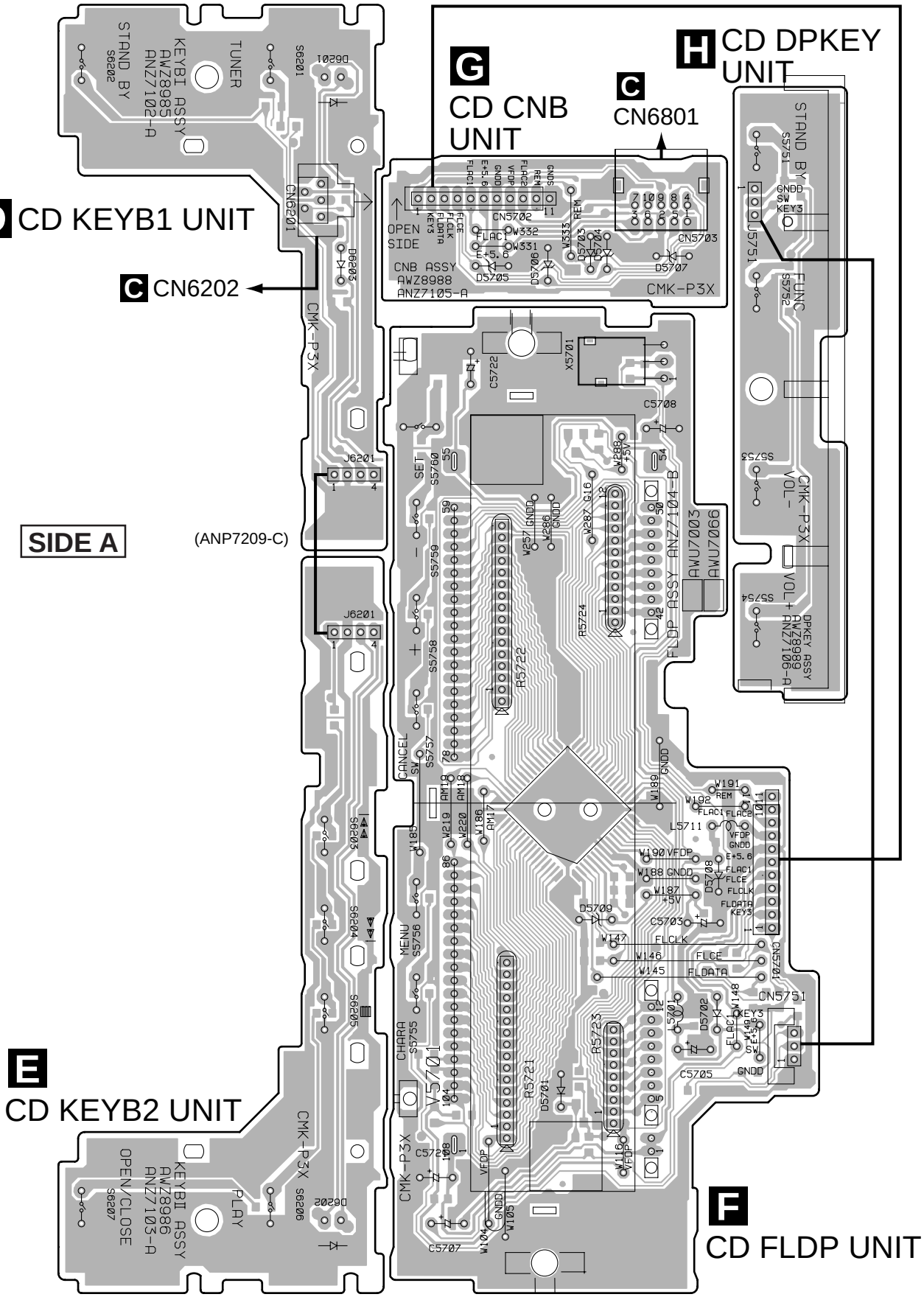


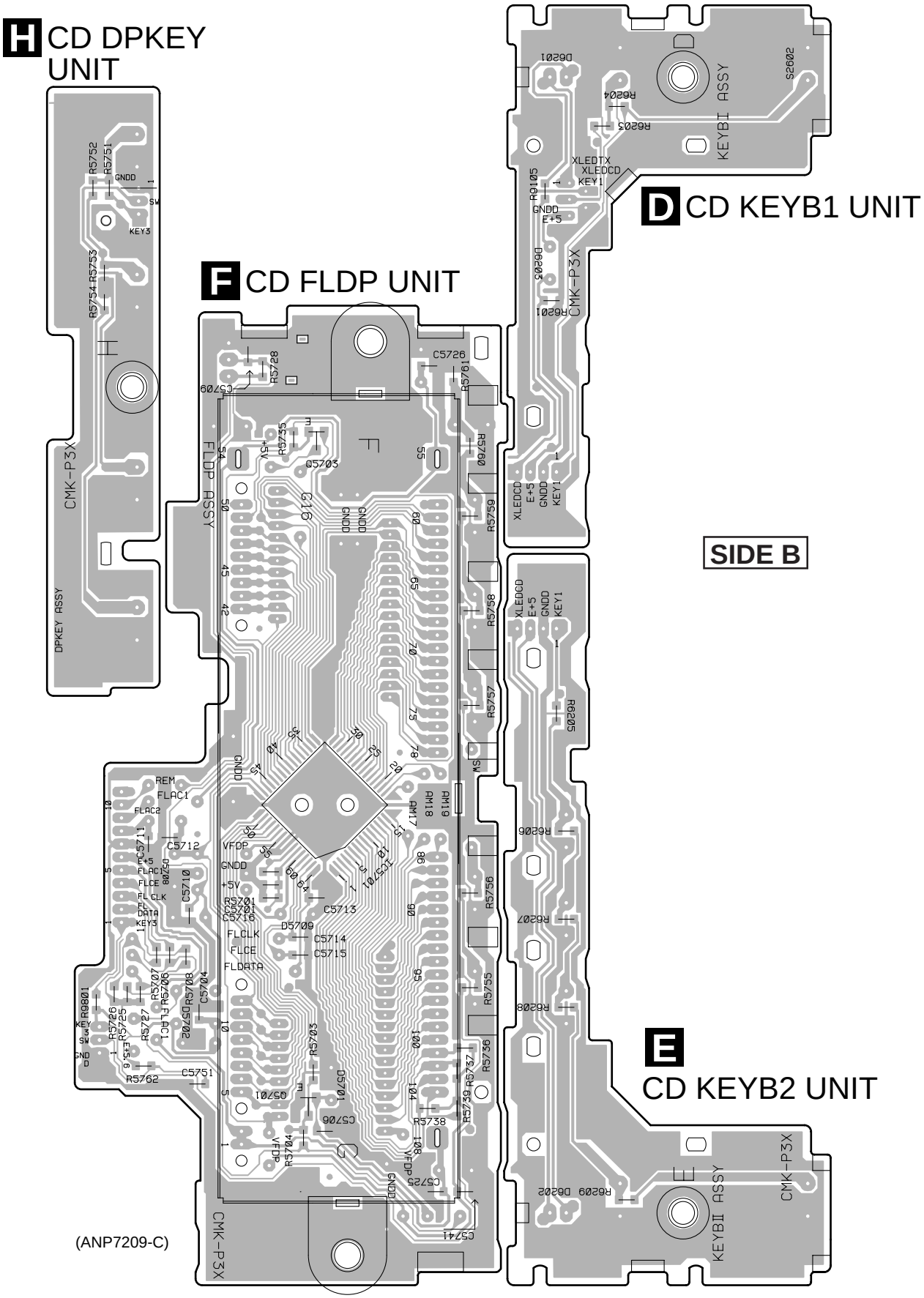
IC1101
IC3601

IC1301
Q1342

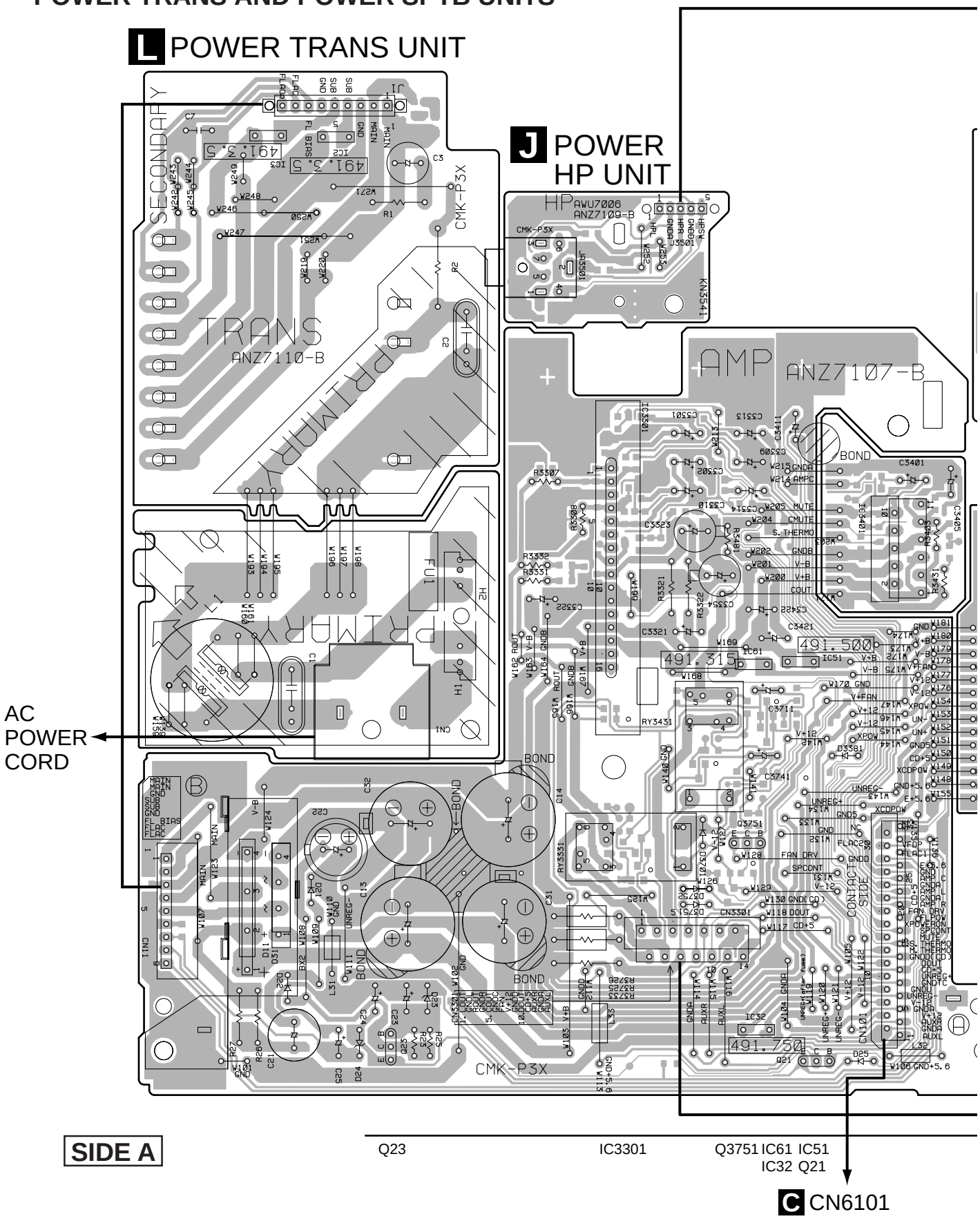
Q1541
Q1544
Q6001
Q6004

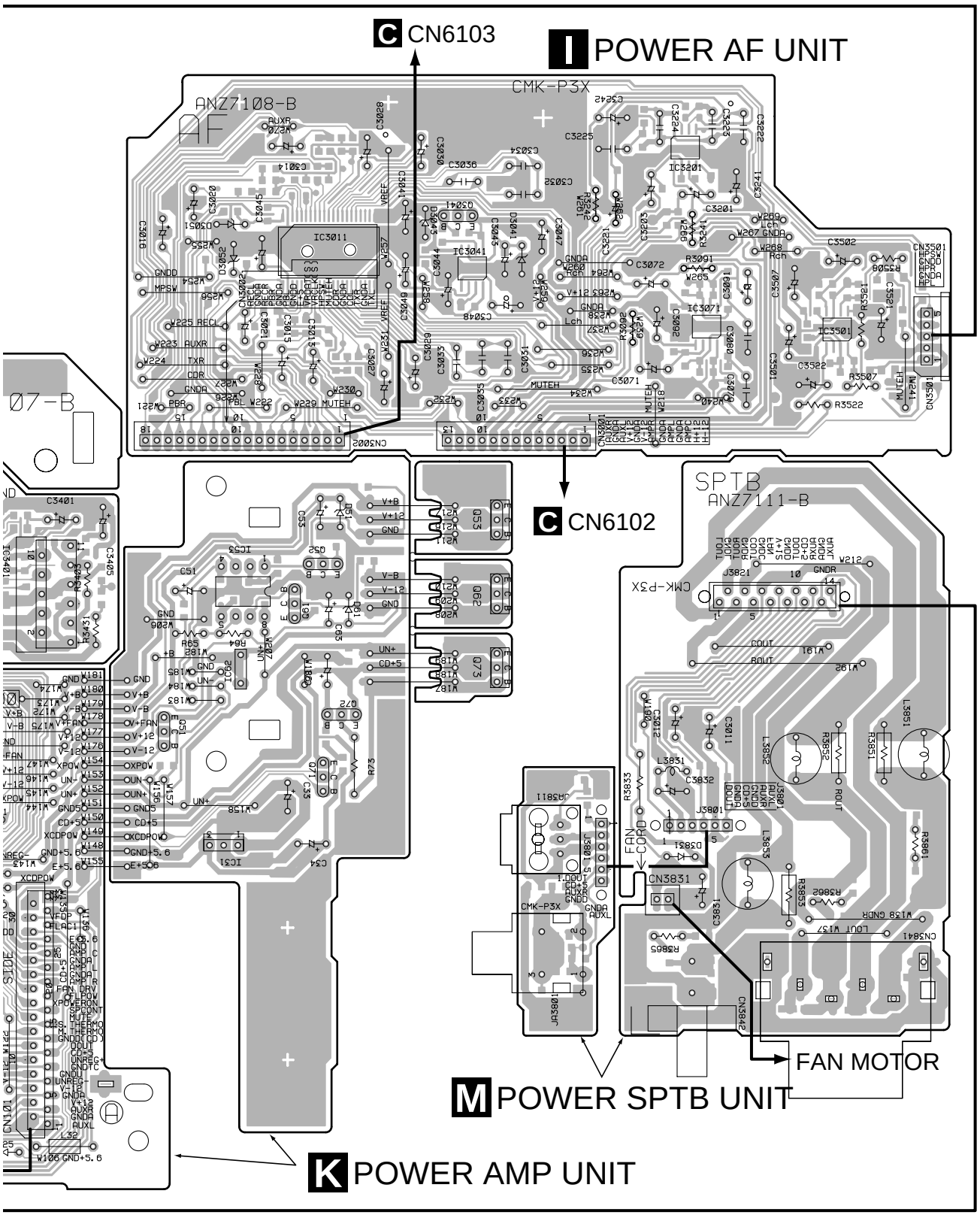
4.3 CD KEYB1, CD KEYB2, CD FLDP, CD CNB AND CD DPKEY UNITS




H CD DPKEY UNIT
F CD FLDP UNIT
D CD KEYB1 UNIT
E CD KEYB2 UNIT
SIDE B
(ANP7209-C)
CMK-P3X
DPKEY ASSY
FLDP ASSY
KEYBI ASSY
KEYBII ASSY

4.4 POWER AF, POWER HP, POWER AMP, POWER TRANS AND POWER SPTB UNITS



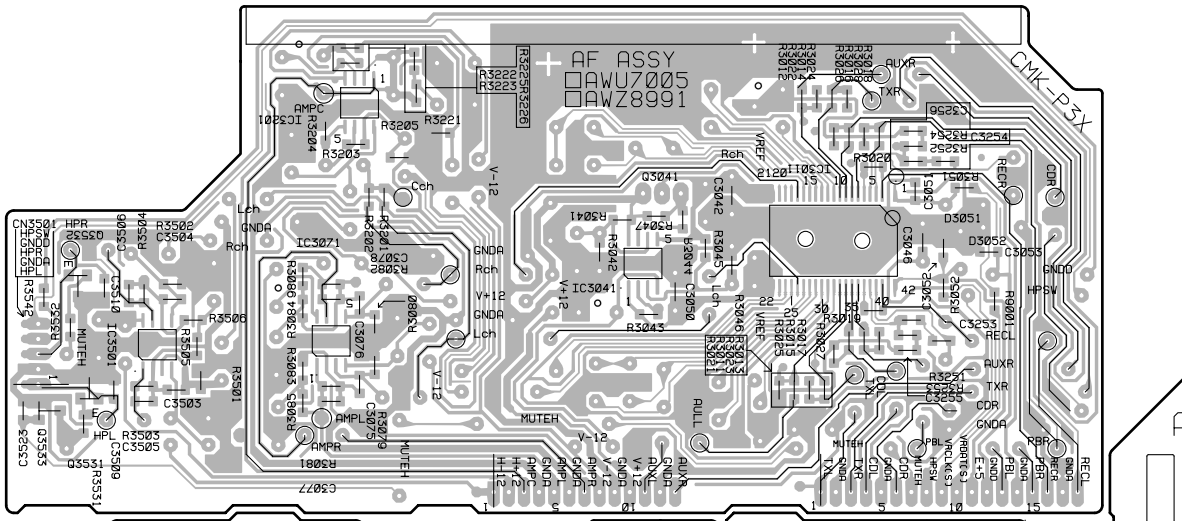

C CN6103
I POWER AF UNIT
CMK-P3X
ANZ7108-B
AF
C CN6102
SPTB
ANZ7111-B
CMK-P3X
FAN MOTOR
M POWER SPTB UNIT
K POWER AMP UNIT
Q3041
Ø7-B
Q51 IC53 Q61 Q52
IC31 IC62 Q71 Q72
Q53
Q62
Q73
(ANP7210-B)
SIDE A
L01

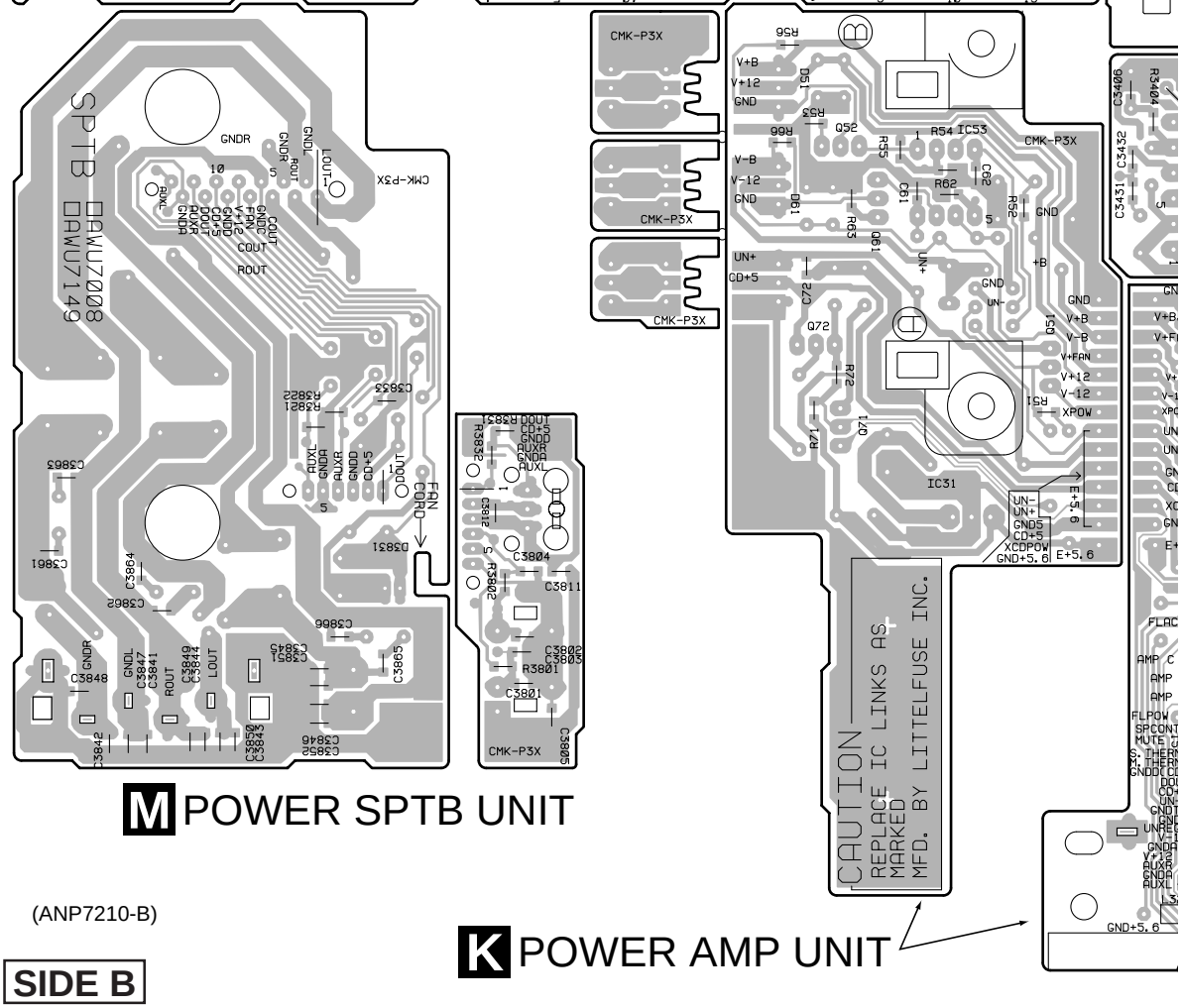
I POWER AF UNIT

IC3201

IC3011
IC3041
Q3532

IC3071
IC3501
Q3531
Q3533





M POWER SPTB UNIT

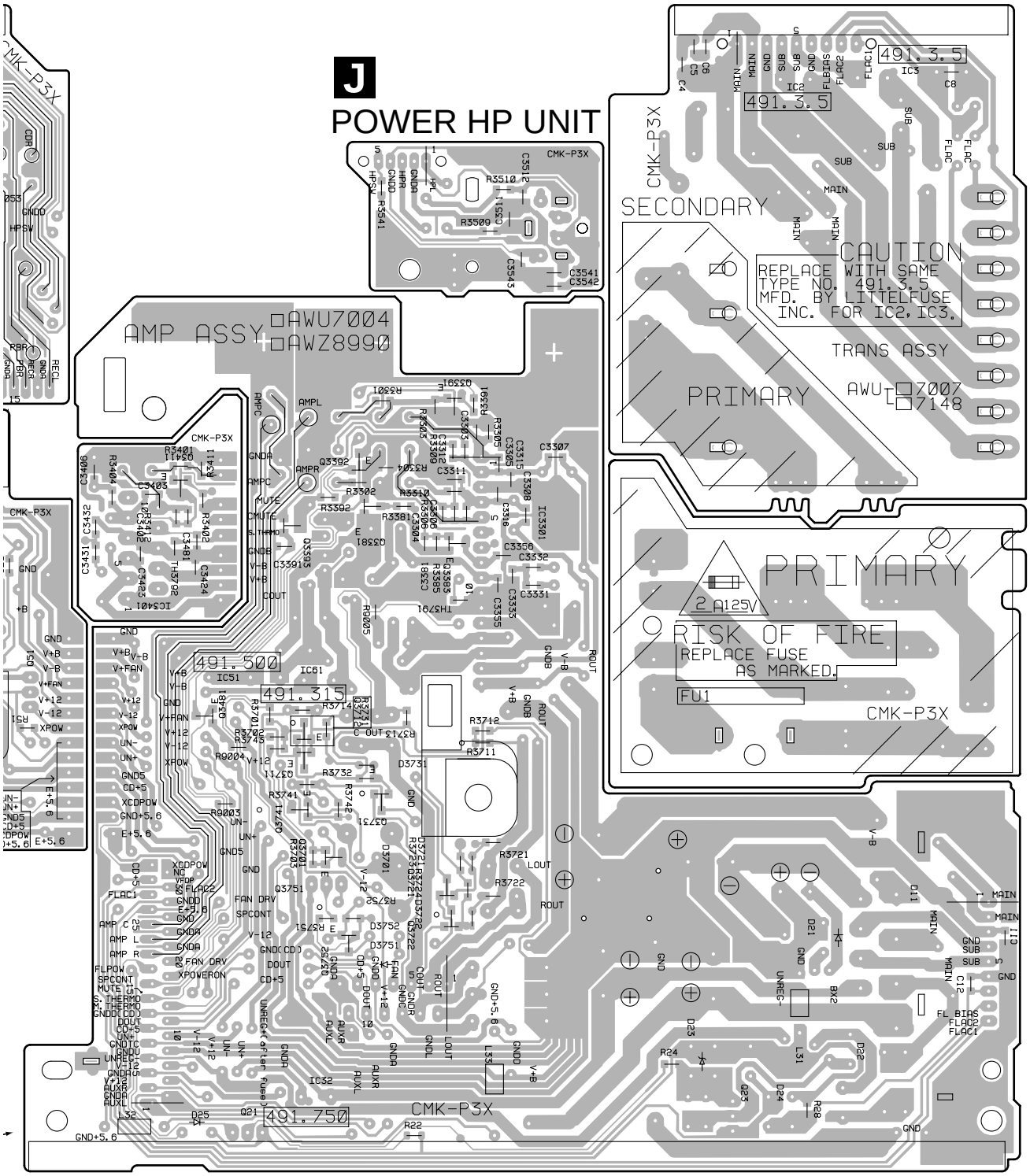
(ANP7210-B)

K POWER AMP UNIT

SIDE B

L POWER TRANS UNIT

J POWER HP UNIT



Q3393 Q3392 Q3391
Q3481 Q3712 Q3381 Q3383
Q3711 Q3701 Q3731 Q3721
Q3741 Q3752 Q3722

SIDE B

5. PCB PARTS LIST

NOTES: ●*Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).
560 Ω → 56 × 10¹ → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47 × 10³ → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω → 562 × 10¹ → 5621 ..... RN1/4PC 5 6 2 1 F

Mark	No.	Description	Part No.

LIST OF ASSEMBLIES

	FM/AM TUNER MODULE	AXQ7065
NSP	MECHANISM BOARD ASSY	PWX1192
NSP	MOTH ASSY	AWM7386
	├CD MAIN UNIT	AWU7147
	├CD KEYB1 UNIT	AWZ8985
	├CD KEYB2 UNIT	AWZ8986
	├CD FLDP UNIT	AWU7003
	├CD CNB UNIT	AWZ8988
	└CD DPKEY UNIT	AWZ8989
NSP	POWER ASSY	AWM7387
	├POWER AF UNIT	AWZ8991
	├POWER HP UNIT	AWU7006
	├POWER AMP UNIT	AWZ8990
	├POWER TRANS UNIT	AWU7148
	└POWER SPTB UNIT	AWU7149

A FM/AM TUNER MODULE

SEMICONDUCTORS

IC6201	LA1832ML
IC6202	LC72131MD
Q6402	2SC2223
Q6203	2SC2705
Q6201, Q6202	2SC2712
Q6214, Q6403	2SC2714
Q6404	2SK302
Q6401	3SK194
Q6204	DTA124ES
Q6205	DTC124EK
D6202	1SS254
D6401, D6402	1T378A

COILS AND FILTERS

L6404	ATC1003
L6401	ATC1020
L6402	ATC1021
F6204	ATF-107
F6203	ATF-119
F6401	ATF-155
F6206	ATF7008
F6202	ATF7011
L6206, L6208, L6403	LAU2R2J

TRANSFORMERS

T6201	ATB7008
T6401	ATE7002

CAPACITORS

C6208	CCSQCH100D50
C6212, C6274, C6275, C6408	CCSQCH101J50
C6221, C6222, C6416	CCSQCH150J50
C6271	CCSQCH200J50
C6415	CCSQCH330J50
C6406	CCSQCH331J50
C6401, C6419	CCSQCH5R0C50
C6407	CCSQCK1R0C50
C6410	CCSQCK2R0C50
C6413	CCSQRH180J50
C6414	CCSQRH8R0D50
C6405	CCSQTH150J50
C6234, C6235	CEAL1R0M50
C6245	CEAL470M16
C6224	CEAT100M50
C6243	CEAT101M16
C6231	CEAT1R0M50
C6227	CEAT220M25
C6214, C6236	CEAT2R2M50
C6262	CEAT3R3M50
C6219	CEAT470M10
C6244	CEAT470M16
C6249, C6250, C6265, C6266	CEAT4R7M50
C6258	CEJA470M16
C6215	CFTLA103J50
C6211, C6254, C6403, C6412, C6417	CKSQYB102K50
C6201, C6205, C6210, C6237, C6276	CKSQYB103K50
C6278, C6280, C6281, C6402, C6409	CKSQYB103K50
C6418	CKSQYB103K50
C6251, C6252	CKSQYB153K50
C6203, C6259	CKSQYB223K50
C6228	CKSQYB472K50
C6209	CKSQYB473K50
C6230	CKSQYB821K50
C6218, C6223, C6255	CKSQYF103Z50

Mark	No.	Description	Part No.
	C6220, C6226, C6242, C6256		CKSQYF223Z50
	C6225		CKSQYF473Z50

RESISTORS

R6280		RD1/4PU101J
R6413, R6416, R6418, R6906, R6909		RS1/8S0R0J
R6401		RS1/8S470J
VR6201(10kΩ)		PCP1029
Other Resistors		RS1/10S□□□J

OTHERS

BN6202	4P ANTENNA TERMINAL	AKE7025
X6202	CRYSTAL RESONATOR (456kHz)	ASS1066
X6201	CRYSTAL RESONATOR (7.2MHz)	ASS1093
CN6201	14P SOCKET	KP200IA14L
	AM RF TUNING BLOCK	AXX7041

B MECHANISM BOARD ASSY

SWITCHES

	S610	DSG1016

OTHERS

CN610	MT CONNECTOR(4P)	173979-4

C CD MAIN UNIT

SEMICONDUCTORS

	IC1101	CXA1372BQ
	IC1301	CXD2529Q
⚠	IC3901,IC3902	ICP-N20
⚠	IC1201	LA6517
⚠	IC1202	LA6520
	IC6101	PD4843B
	Q3904, Q6001, Q6004, Q6103	2SA1162
	Q3901	2SA1560
	Q3903, Q6002, Q6003, Q6101	2SC2712
	Q3902	2SC4040
	Q1543, Q1544	2SD2114K
	Q1341	2SK246
	Q1342, Q1541, Q1542, Q3905	DTA124EK
	Q6102	DTC143EK
	D1301, D1302, D1341, D3611	1SS254
	D6101–D6104	1SS254
	D6907, D6908	MTZJ15B
	D1218	MTZJ6.8B
	D6801–D6805, D6904–D6906	MTZJ8.2B
	D6901–D6903	UDZS8.2B

COILS AND FILTERS

	L114 Beads Filter	ATX1012
	L1305, L1306, L1310	LAU100J
	L1303	LAU1R0J
	L6101	LAU220J

CAPACITORS

	C6104	ACH7013
	C6106	CCSQCH101J50
	C1341, C1342	CCSQCH120J50
	C1481, C1482	CCSQCH151J50
	C1326	CCSQCH220J50
	C1391–C1393, C6114, C6120, C6124	CCSQCH221J50
	C6126	CCSQCH221J50
	C1118	CCSQSL561J50
	C1483, C1484	CCSQSL681J50
	C1211, C1212, C1485, C1486, C6107	CEAL100M16
	C6130	CEAL100M16
	C1111, C1302, C1303, C1311–C1313	CEAL101M6R3
	C1316, C6101	CEAL101M6R3
	C3901, C6109	CEAL1R0M50
	C1103, C1105	CEAL4R7M35
	C1309	CEALR47M50
	C1119, C6121, C6122, C6125	CKSQYB102K50
	C1107, C1112, C1117, C1125, C1218	CKSQYB103K50
	C1101, C1102, C1104, C1106	CKSQYB104K25
	C1306, C6118, C6119	CKSQYB152K50
	C1114	CKSQYB182K50
	C6903, C6904	CKSQYB332K50
	C1109, C1113, C1116	CKSQYB333K50
	C1115	CKSQYB472K50
	C1108, C1307	CKSQYB473K50
	C6001, C6105, C6131	CKSQYB474K16
	C1110, C1122, C1205, C1210, C1215	CKSQYF103Z50
	C1219, C1225, C1304, C1317, C1318	CKSQYF103Z50
	C1320–C1322, C1390, C3611	CKSQYF103Z50
	C6102, C6103, C6108, C6111, C6113	CKSQYF103Z50
	C6199, C6901, C6902, C6907	CKSQYF103Z50

RESISTORS

	R6200	RD1/4PU223J
⚠	R1201, R1202	RFA1/4PS4R7J
	R6801	RN1/10SE1001D
⚠	R6148	RS1/10S102J
	VR1101,VR1102(22kΩ)	PCP1030
	Other Resistors	RS1/10S□□□J

OTHERS

CN1101	FPC CONNECTOR(12P)	12FMZ-ABT
CN1202	MT CONNECTOR(4P)	173981-4
CN1205	MT CONNECTOR(5P)	173981-5
CN6101	FFC CONNECTOR(33P)	52045-3345
CN6202	FFC BOTTOM CONNECTOR(5P)	52492-0520
CN6901	SOCKET(19P)	AKP7001
CN6801	10P MINI DIN SOCKET	AKP7015
CN3611	14P PLUG	KM200IA14
CN6102	13P PLUG	KM200TA13
CN6103	18P PLUG	KM200TA18
X1341	CRYSTAL RESONATOR (16.9344MHz)	PSS1008
CN1102	6P SIDE POST	VKN-004
KN1301,KN6101	EARTH METAL FITTING	VNF1084
X6101	CERAMIC RESONATOR (4.19MHz)	VSS1014

Mark	No.	Description	Part No.

D CD KEYB1 UNIT

SEMICONDUCTORS

	D6203	1SS254
	D6201	SLP3118C51H

SWITCHES

	S6201, S6202	RSG1034

RESISTORS

	All Resistors	RS1/10S□□□J

OTHERS

	CN6201 5P FFC CONNECTOR	52044-0545
	J6201 4P JUMPER WIRE	D20PWW0405E

E CD KEYB2 UNIT

SEMICONDUCTORS

	D6202	SLP3118C51H

SWITCHES

	S6203–S6207	RSG1034

RESISTORS

	All Resistors	RS1/10S□□□J

F CD FLDP UNIT

SEMICONDUCTORS

	IC5701	LC75710E
	Q5703	2SC2712
	Q5701	DTC124EK
	D5702	11ES2
	D5701	1SS254
	D5708	MTZJ39C
	D5709	MTZJ8.2B

COILS AND FILTERS

	L5711	LAU100J
	L5701	LAU220J

SWITCHES

	S5755–S5760	RSG1030

CAPACITORS

	C5701	CCSQCH300J50
	C5707	CEAL100M16
	C5703, C5705	CEAL101M6R3
	C5721, C5722	CEAL1R0M50
	C5708	CEAL470M16
	C5713–C5715	CKSQYB102K50
	C5709	CKSQYB103K50
	C5711, C5712, C5725, C5726	CKSQYB473K50
	C5706	CKSQYF103Z50
	C5704	CKSQYF224Z25
	C5710	CKSQYF473Z50

Mark	No.	Description	Part No.

RESISTORS

	R5724	RA11T473J
	R5721, R5722	RA15T473J
	R5723	RA8T473J
	Other Resistors	RS1/10S□□□J

OTHERS

	9P CABLE HOLDER	51048-0900
	12P CABLE HOLDER	51048-1200
	CN5751	52147-0310
	3P JUMPER CONNECTOR	
	V5701 FL TUBE	AAV7051
	FL SPACER	AEB7091
	X5701 REMOTE RECEIVER UNIT	GP1U27X
	CN5701 10P SOCKET	KP200TA10L

G CD CNB UNIT

SEMICONDUCTORS

	D5707	MTZJ2.0A
	D5703–D5706	MTZJ8.2B

OTHERS

	CN5703 10P MINI DIN SOCKET	AKP7015
	CN5702 10P PLUG	KM200TA10

H CD DPKEY UNIT

SWITCHES

	S5751–S5754	RSG1030

RESISTORS

	All Resistors	RS1/10S□□□J

OTHERS

	J5751 3P JUMPER WIRE	D20PWY0305E

I POWER AF UNIT

SEMICONDUCTORS

	IC3011	M62419FP
	IC3071,IC3201	NJM4558MD
	IC3501	NJM4560M
	IC3041	UPC4570G2
	Q3041	2SA1048
	Q3531, Q3532	2SD2114K
	Q3533	DTA124EK
	D3043	MTZJ15B

CAPACITORS

	C3051, C3052, C3505, C3506	CCSQCH101J50
	C3503, C3504	CCSQCH470J50
	C3016, C3020, C3028, C3030	CEAL100M16
	C3091, C3092, C3203, C3221	CEAL100M16
	C3241, C3242, C3501, C3502	CEAL100M16
	C3521, C3522	CEAL100M16
	C3041	CEAL330M10
	C3049, C3201, C3507	CEAL470M16
	C3071, C3072	CEALR22M50
	C3015, C3021, C3027, C3029, C3045	CEAT100M50

Mark	No.	Description	Part No.
	C3047, C3048		CEAT100M50
	C3013, C3014, C3043		CEAT1R0M50
⚠	C3044		CEYA470M10
	C3033, C3034, C3222		CFTLA683J50
	C3509, C3510		CKSQYB102K50
	C3042, C3046		CKSQYF103Z50
	C3050, C3053		CKSQYF473Z50
	C3223		CQMA333J50
	C3031, C3032, C3035, C3036		CQMA682J50

RESISTORS

R3521, R3522		RD1/4PU100J
R3507, R3508		RD1/4PU470J
Other Resistors		RS1/10S□□□J

OTHERS

CN3001	13P SOCKET	KP200TA13L
CN3002	18P SOCKET	KP200TA18L

J POWER HP UNIT

CAPACITORS

C3511, C3512		CKSQYF223Z50
C3541–C3543		CKSQYF473Z50

RESISTORS

All Resistors		RS1/10S□□□J

OTHERS

	5P CABLE HOLDER	51048-0500
JA3501	MINI JACK	AKN7003
J3501	2mm PITCH JUMPER(5P)	D20PDY0510E
KN3541	EARTH METAL FITTING	VNF1084

K POWER AMP UNIT

SEMICONDUCTORS

Mark			
⚠	IC61 (315mA 125V)		AEK7003
⚠	IC51 (500mA 125V)		AEK7005
⚠	IC32 (750mA 125V)		AEK7007
⚠	IC3401		LM3886TF
⚠	IC53		NJM4558D-D
⚠	IC31		NJM78M56FA
⚠	IC3301		STK401-030
⚠	Q61		2SA1048
	Q3721, Q3722, Q3731		2SA1162
⚠	Q23		2SB1238X
⚠	Q53, Q73		2SB1566
⚠	Q52, Q72		2SC2458
	Q3383, Q3711, Q3712, Q3741		2SC2712
	Q3391, Q3392, Q3411, Q3701, Q3752		2SD2114K
⚠	Q62		2SD2395
	Q3393, Q3481		DTA124EK
	Q21, Q3751		DTA124ES
	Q3381		DTA144EK
	Q51		DTC124ES
⚠	D21, D22, D3751		11ES2
	D25, D3381, D3701		1SS254
	D3721, D3722, D3731		1SS355
⚠	D31		D2SBA20(B)
⚠	D11		D3SBA20(B)
⚠	D23		MTZJ33A
⚠	D24		MTZJ6.2B
⚠	D51, D61		MTZJ18B
	TH3791,TH3792		AEX7002

RELAYS

RY3331,RY3431		ASR7007

CAPACITORS

C3307, C3308		CCSQCH100D50
C3403		CCSQCH121J50
C3303, C3304		CCSQCH330J50
C3305, C3306		CCSQCH470J50
C33, C51, C71		CEAL1R0M50
C21		CEANP101M35
C23–C25, C3313, C3314, C3401		CEAT100M50
C3741		CEAT100M50
C22		CEAT101M2A
C3323, C3354		CEAT101M50
C3321, C3322, C3421, C3422		CEAT220M50
C3711		CEAT221M6R3
C3309, C3310		CEAT330M16
C3405, C3411		CEAT470M10
C32		CEAT472M16
C13, C14		CEAT472M35
C31		CEAT682M16
C34		CEJA100M16
C53, C63		CEJA330M16
C3301, C3302		CEZA100M50
C3402		CKSQYB104K25
C3331–C3333, C3431, C3432		CKSQYB473K50
C12, C3355, C3356, C3406		CKSQYF103Z50
C3381, C3423, C3424, C61, C62		CKSQYF473Z50
C72		CKSQYF473Z50

RESISTORS

Mark			
⚠	R3725, R3726, R3733(0.1Ω/1W)		ACN7032
	R3331, R3332, R3431		RD1/4PU100J
	R3481		RD1/4PU123J
	R23, R25		RD1/4PU223J
	R64, R65		RD1/4PU562J
	R3307, R3308, R3403		RD1/4PU563J
⚠	R26, R27, R73		RFA1/4PS100J
⚠	R3321, R3322		RFA1/4PS101J
⚠	R3724		RS1/10S102J
	Other Resistors		RS1/10S□□□J

OTHERS

CN101	FFC CONNECTOR(33P)	52045-3345
CN11	9P JUMPER WIRE	KPD9
CN3301		KPE14
	14P JUMPER CONNECTOR	
	PCB BINDER	VEF1040

Mark	No.	Description	Part No.

L POWER TRANS UNIT

SEMICONDUCTORS

⚠		IC2, IC3	AEK7017

COILS AND FILTERS

⚠		L1	ATF-151

CAPACITORS

⚠		C1, C2(10000pF/AC250V)	ACG7020
⚠		C4–C6	CKSQYB473K50
		C7	CQMA103J50

RESISTORS

⚠		R2 (2.2MΩ/ 1/2W)	RCN1080

OTHERS

	1	CABLE HOLDER(9P)	51052-0900
⚠		CONDENSER COVER	AEC-294
⚠	AN1	1P AC INLET	AKP7027
	H1, H2	FUSE CLIP	AKR1003

M POWER SPTB UNIT

SEMICONDUCTORS

		D3831	1SS254

COILS AND FILTERS

⚠		L3851–L3853	ATH-059
		L3831	LAU100J

CAPACITORS

		C3801, C3802	CCSQCH101J50
		C3803, C3804	CCSQSL471J50
		C3831	CEAT220M50
		C3011, C3012	CEAT2R2M50
		C3832	CEAT470M10
		C3843–C3845	CKSQYB102K50
		C3805, C3811, C3812, C3833	CKSQYF103Z50
		C3841, C3842, C3846	CKSQYF103Z50
		C3861–C3866	CKSQYF473Z50

RESISTORS

		R3851–R3853	RD1/4LMF101J
		R3861–R3863	RD1/4PU6R8J
⚠		R3833	RFA1/4PS330J
		Other Resistors	RS1/10S□□□J

OTHERS

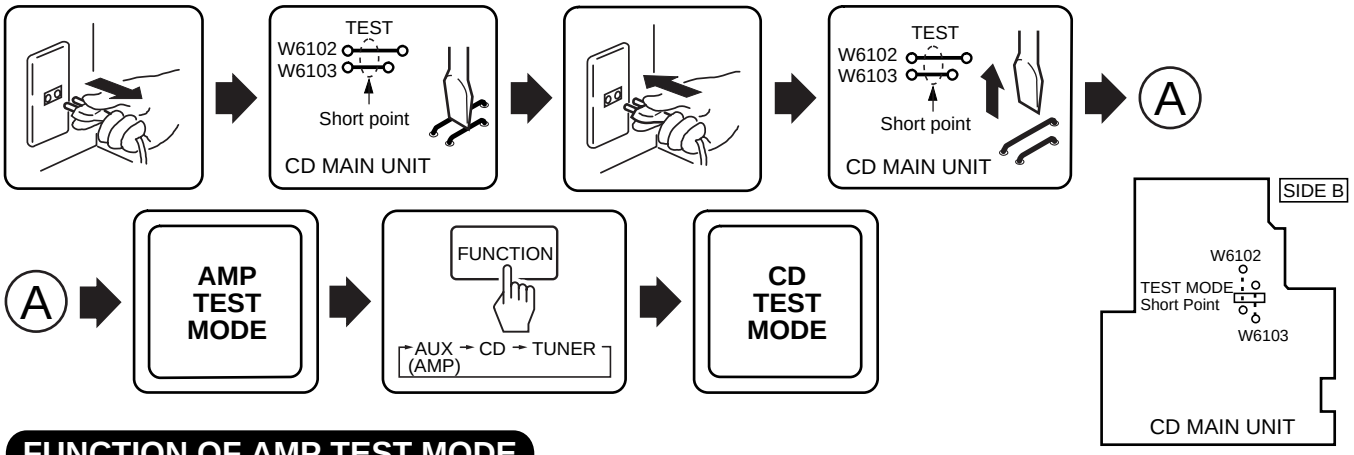
		6P CABLE HOLDER	51048-0600
		14P CABLE HOLDER	51063-1405
	CN3842	2P CONNECTOR	5569-02A1
	CN3841	SPEAKER TERMINAL(4P)	AKE7001
	J3801	6P JUMPER WIRE	D20PDD0610E
	J3821	14P JUMPER WIRE	D15A14-100-2651
	JA3801	AUDIO 2P PIN JACK	RKB1041
	JA3811	OPTICAL OUTPUT JACK	TOTX178

6. ADJUSTMENT

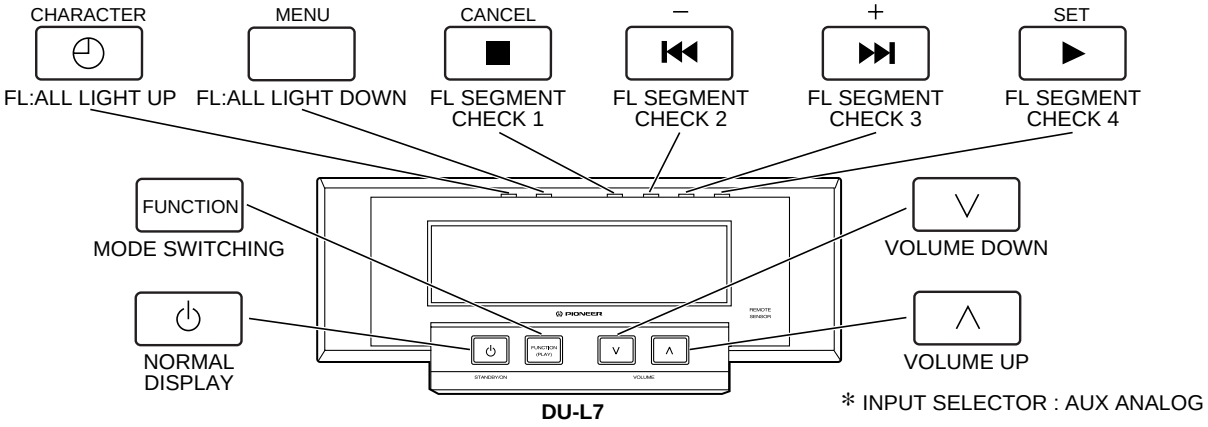
6.1 TEST MODE

6.1.1 HOW TO START/CANCEL TEST MODE

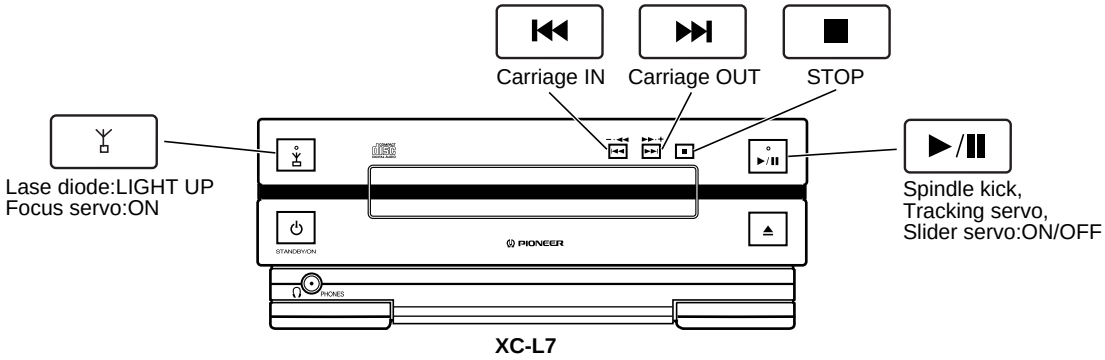
TEST MODE : ON



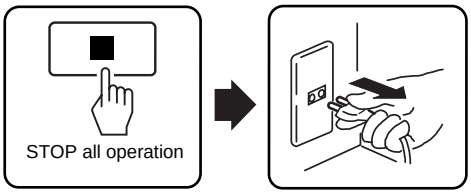
FUNCTION OF AMP TEST MODE



FUNCTION OF CD TEST MODE



TEST MODE : STOP → CANCEL



6.2 TUNER SECTION

6.2.1 FM TUNER SECTION

• Set the mode selector to FM BAND.
• Connect the wiring as shown in Fig. 1.

Step No.	Adjustment Title	FM SG (1kHz, ± 75kHz dev.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (MHz)	Level (dBμV)			
1	Front End Sensitivity	98	0-30	98MHz	L6402 T6401	Adjust so that the DC voltage between the IC6201-pin 20 and GND becomes at maximum level.
2	TUNED IND. Lighting Level	98	18 ± 2	98MHz	VR6201	Adjust so that the indicator of TUNED IND. starts to light up.

Note:
Before adjusting, make sure there is no gap between L6401 and L6402. If there is a gap between them, bring them into contact with each other first, and then make adjustments.

6.2.2 AM TUNER SECTION

• Set the mode selector to AM BAND.
• Connect the wiring as shown in Fig. 1.

Step No.	Adjustment Title	AM SG (400Hz, 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (kHz)	Level (dBμV/m)			
1	Front End Sensitivity	999 (∗1)	35-45	999kHz (∗1)	T6201	Adjust so that the DC voltage between the IC6201-pin 20 and GND becomes at maximum level.

Note (∗1): For the area using 10kHz step, frequencies should be 1000kHz.

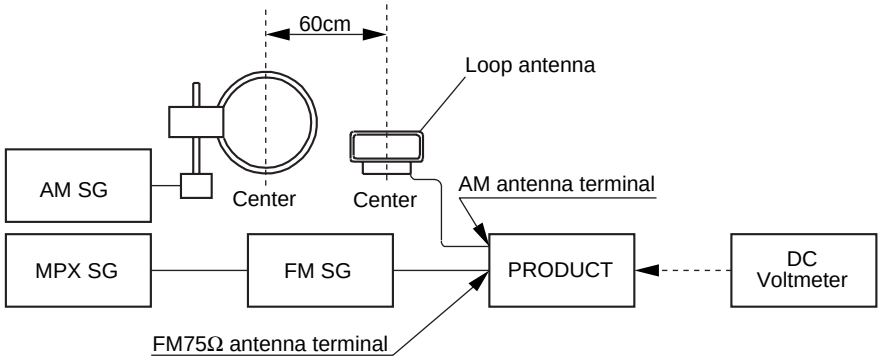


Fig. 1 AM and FM Adjustment Wiring Diagram

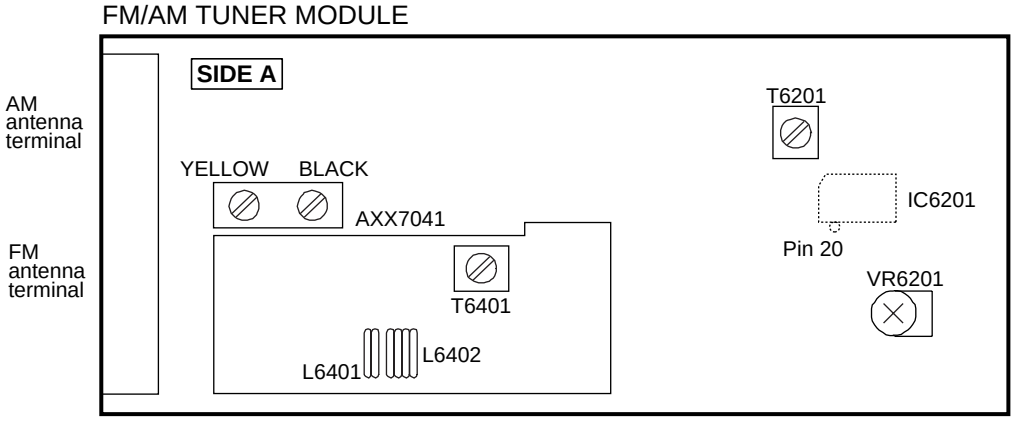
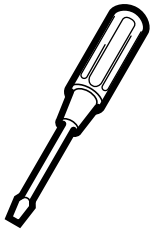
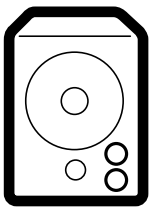
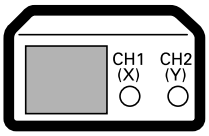
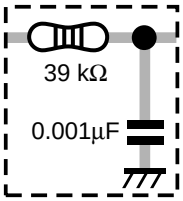


Fig. 2 Adjustment Point

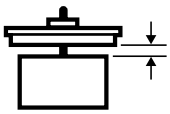
6.3 CD SECTION

6.3.1 PREPARATIONS

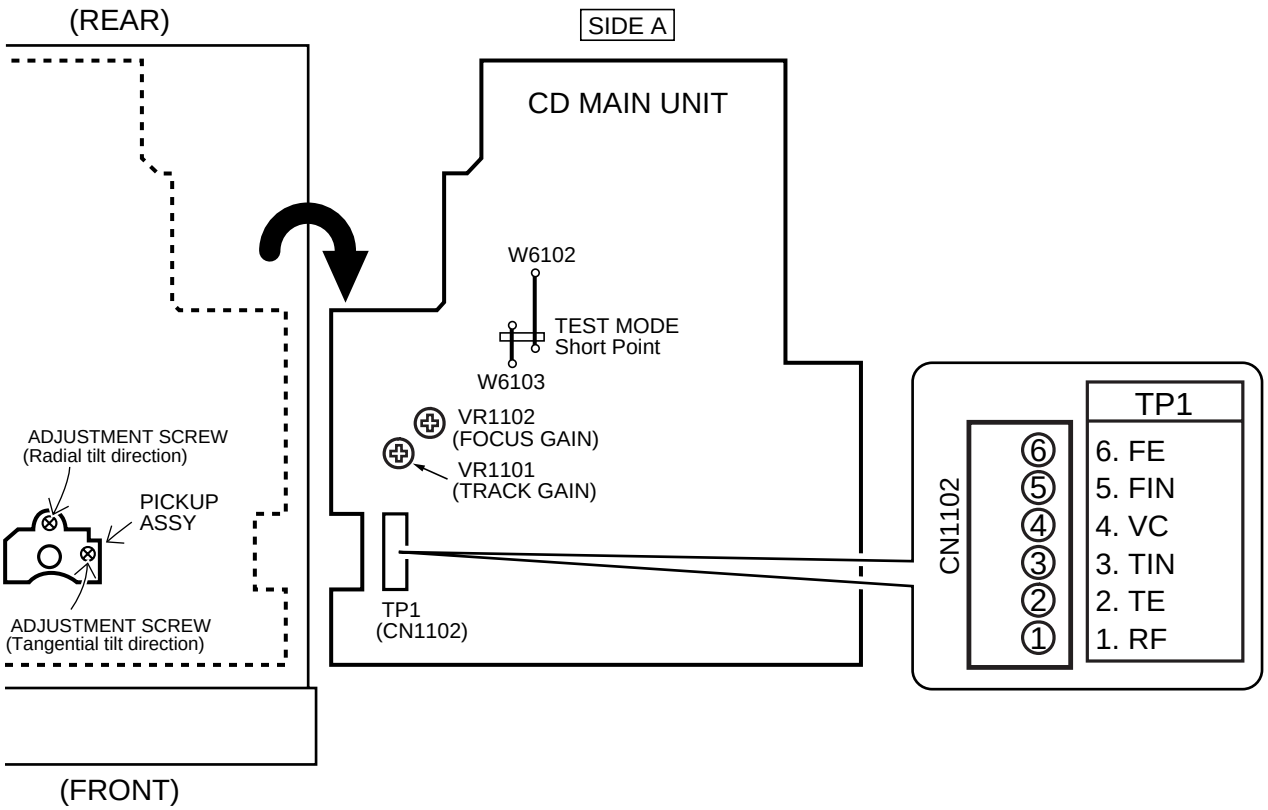
■ **Jigs and Measuring Instruments**

8-cm DISC (With at least about 20 minutes recording)	CD TEST DISC (YEDS-7)	⊖ Precise screwdriver	 ⊖ screwdriver (small)	⊕ screwdriver (medium)
Ball point hexagon wrench (size: 1.5mm) GGK1002	⊕ screwdriver (large)	 Low-frequency oscillator	 Dual-trace oscilloscope (10 : 1 probe)	 Low pass filter (39 kΩ + 0.001μF)

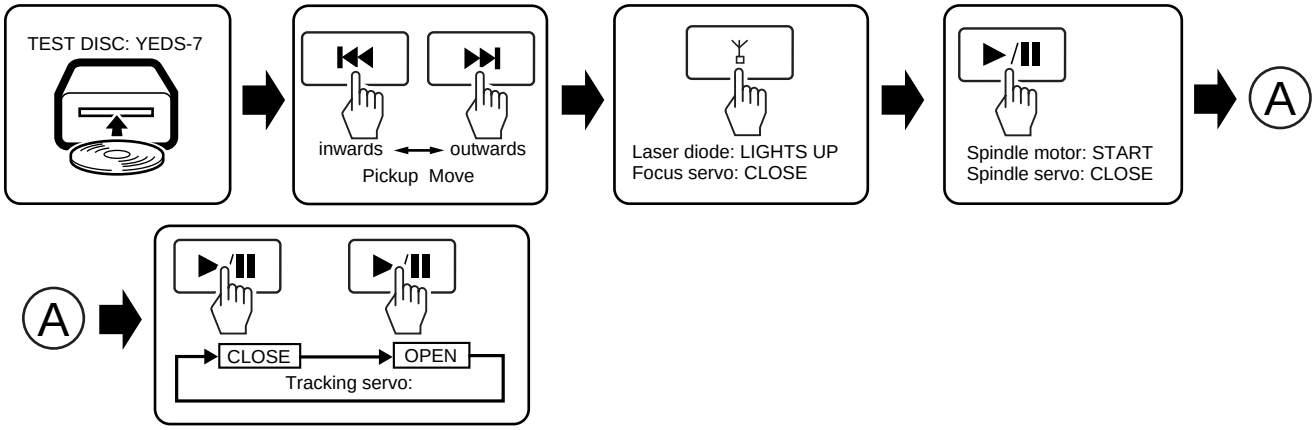
■ **Necessary Adjustment Points**

When	Adjustment Points
Exchange PICKUP	1, 2, 3, 4, 5, 6 → Page 47 to 49
Exchange CD MAIN UNIT	1, 2, 3, 4, 5, 6 → Page 47 to 49
Exchange SERVO MECH ASSY	1, 2, 3, 4, 5, 6 → Page 47 to 49
Exchange SPINDLE MOTOR	 ADJ → Page 9

■ Adjustment Locations

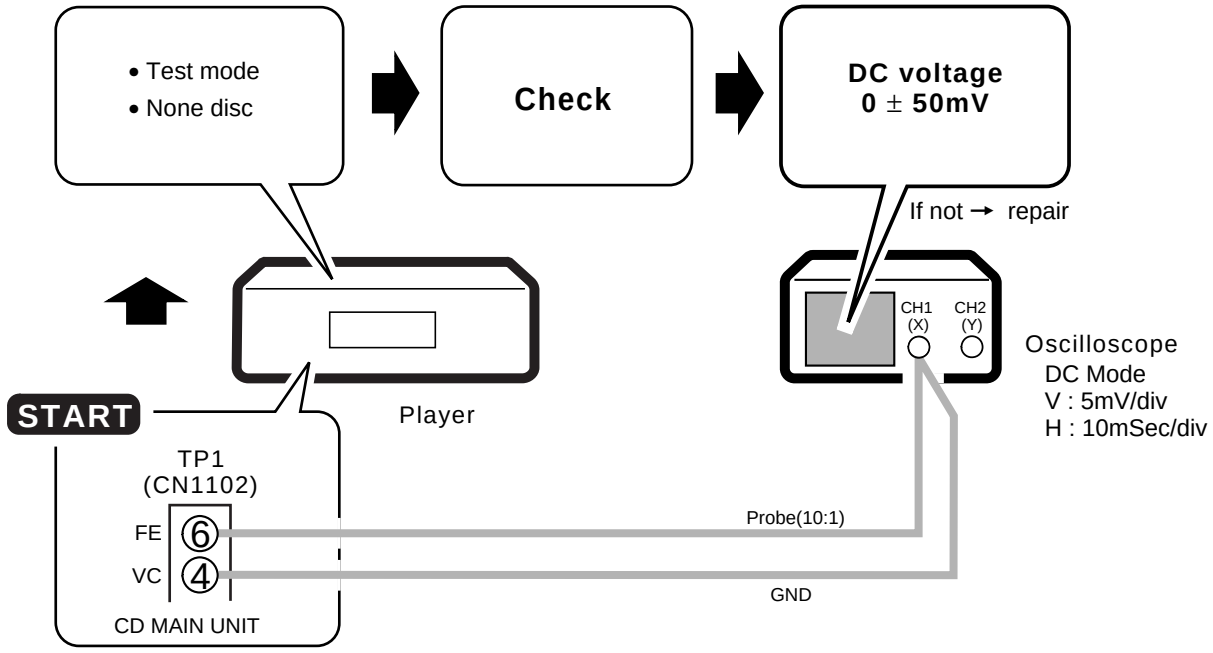


TEST MODE : PLAY

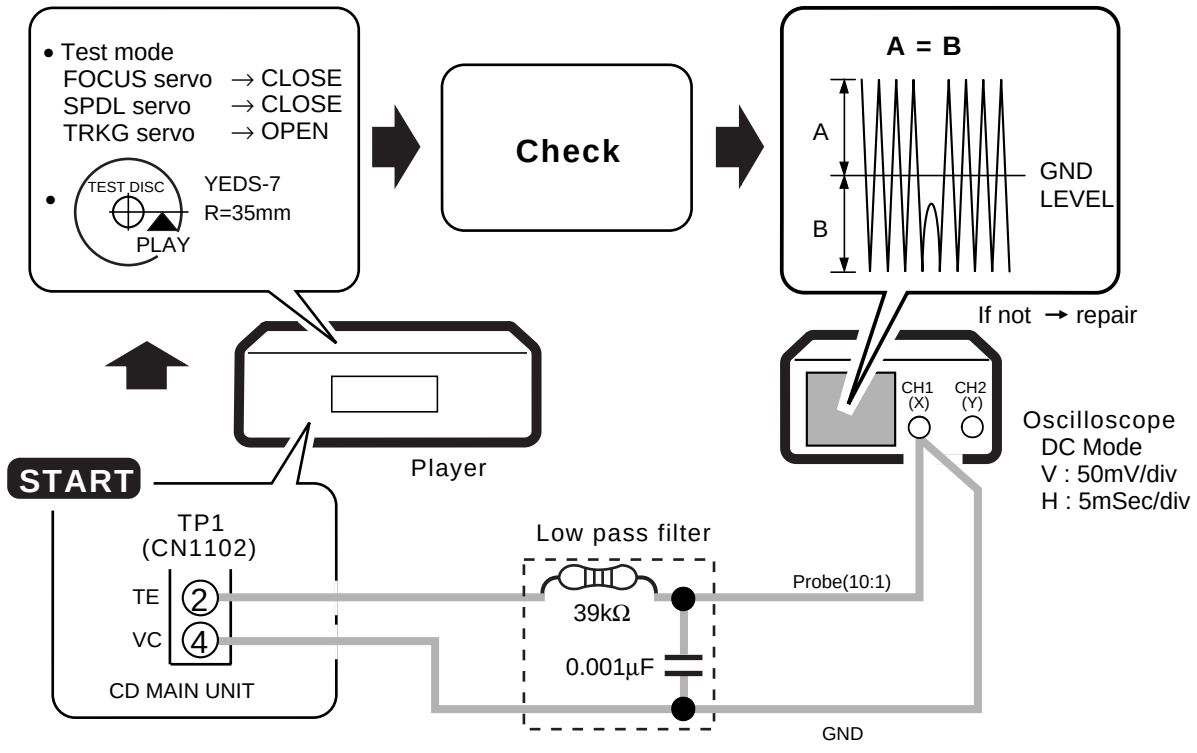


■ **Check and Adjustment**

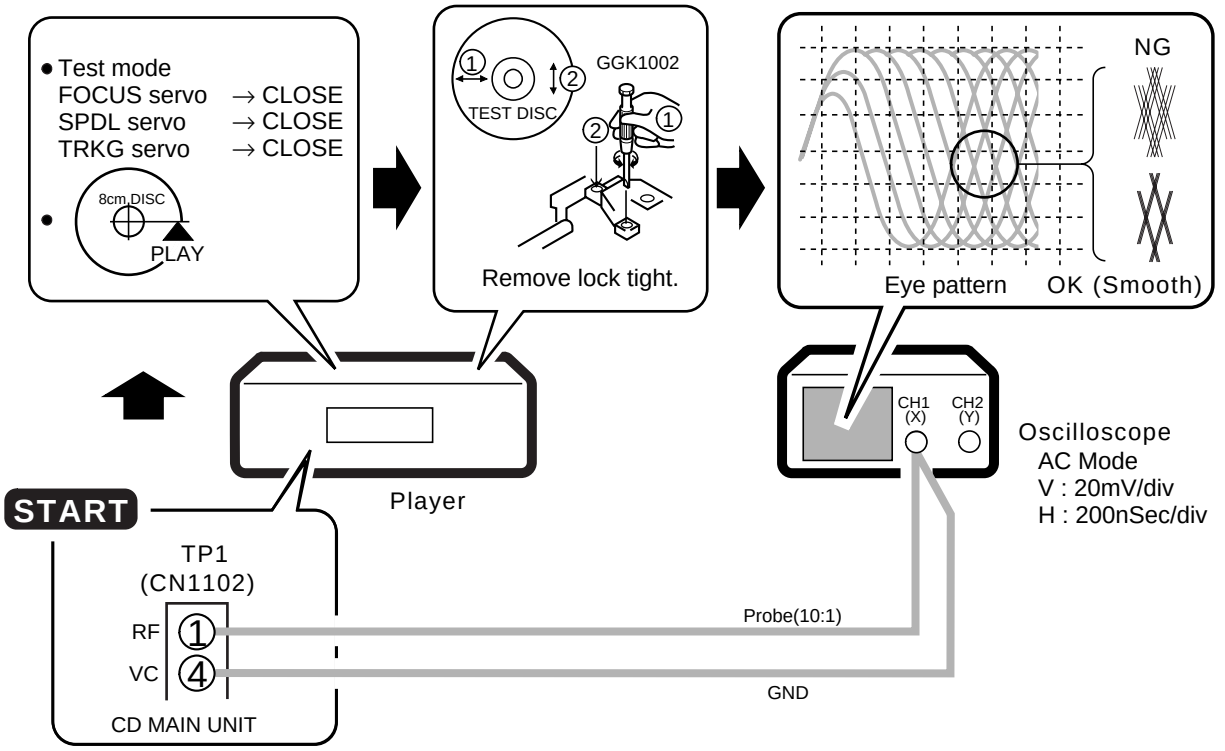
1. Focus Offset Check



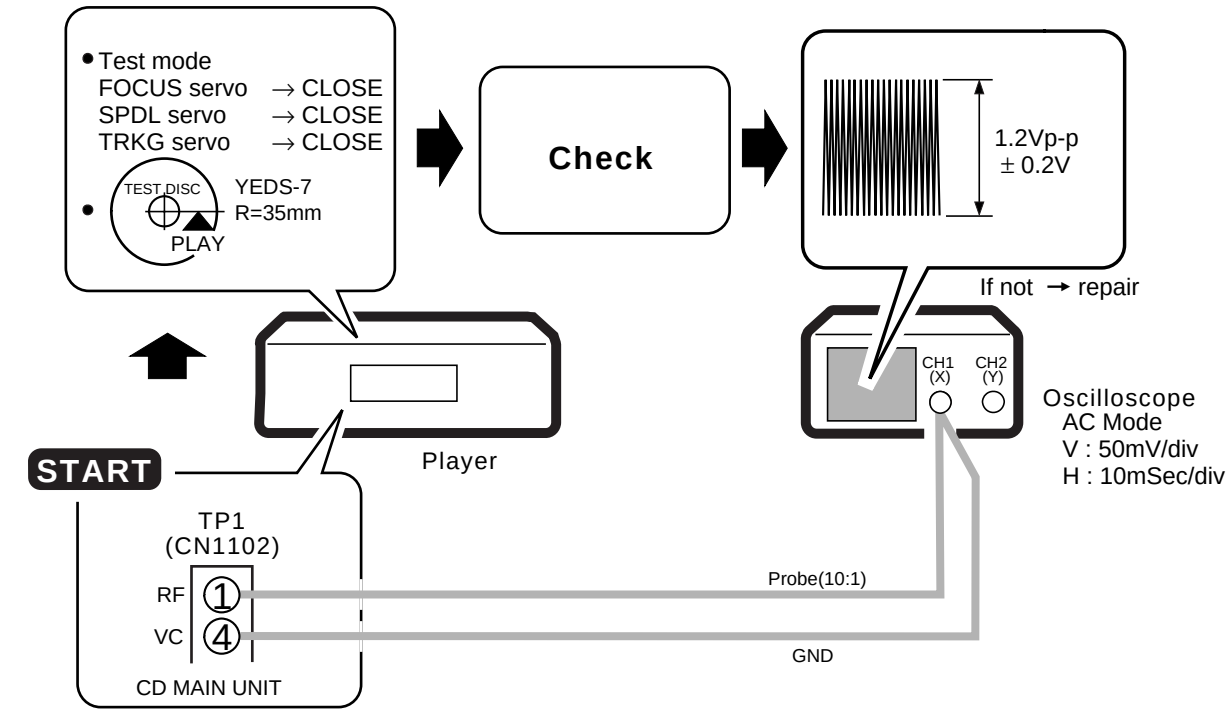
2. Tracking Error Balance Check



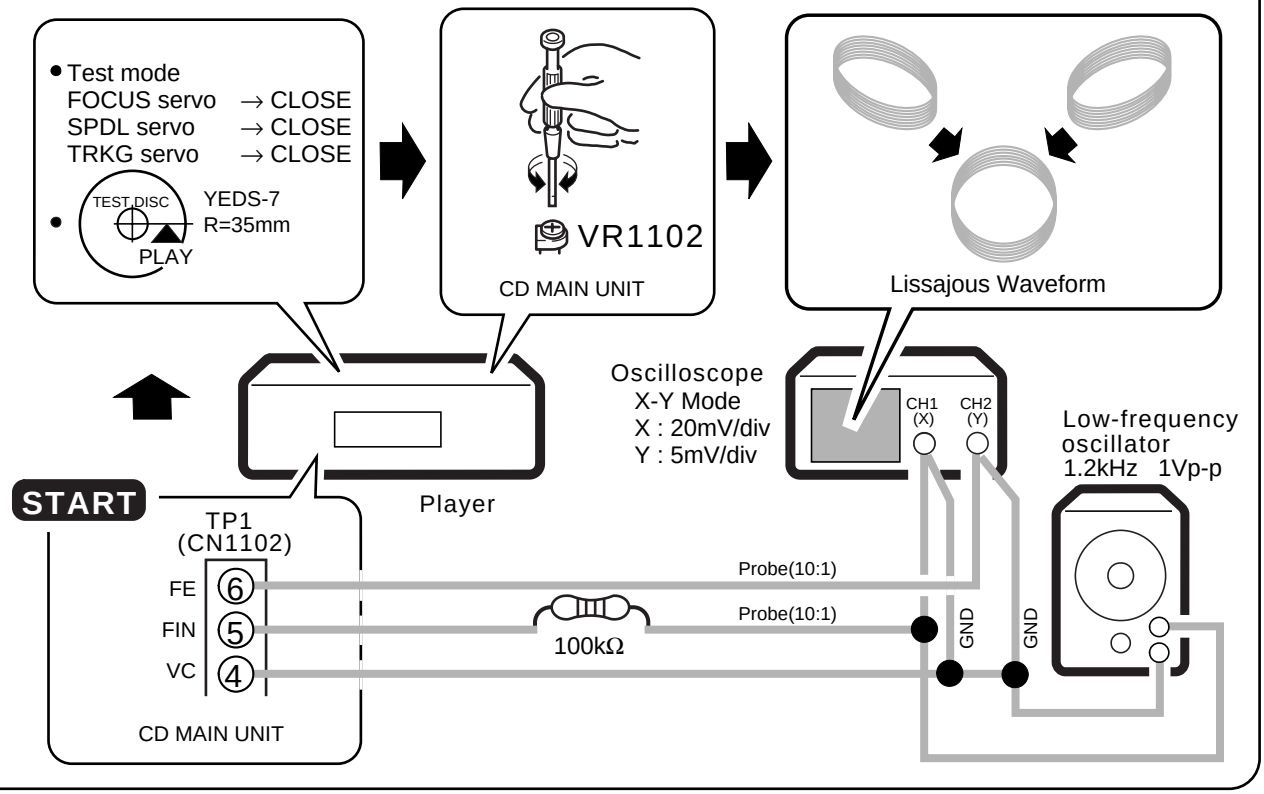
3. Pickup ① Radial/ ② Tangential Direction Tilt Adjustment



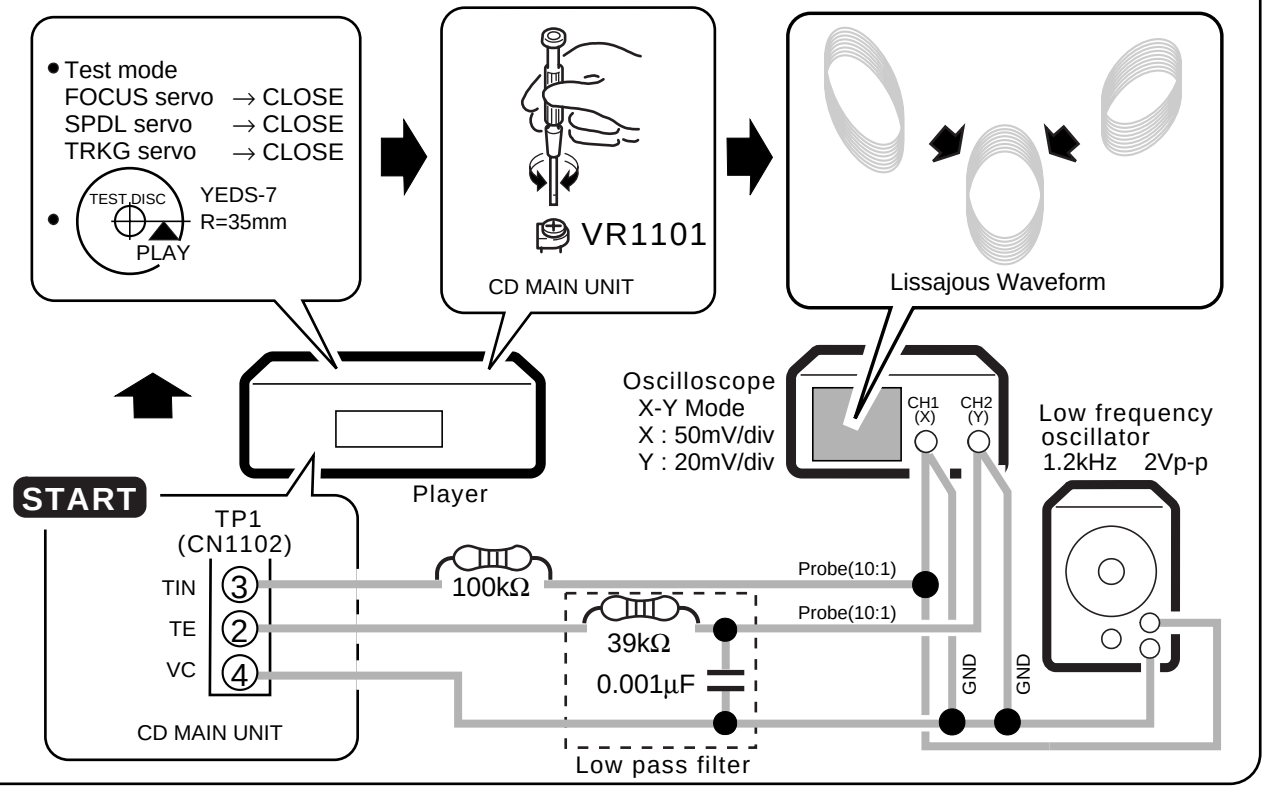
4. RF Level Check



5. Focus Servo Loop Gain Adjustment



6. Tracking Servo Loop Gain Adjustment



7. GENERAL INFORMATION

7.1 PARTS

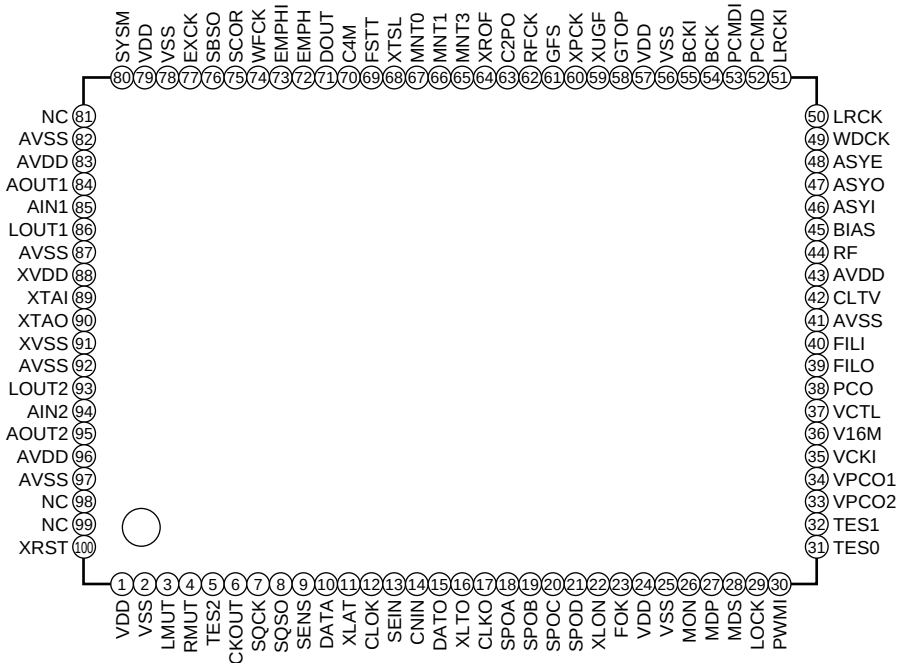
7.1.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

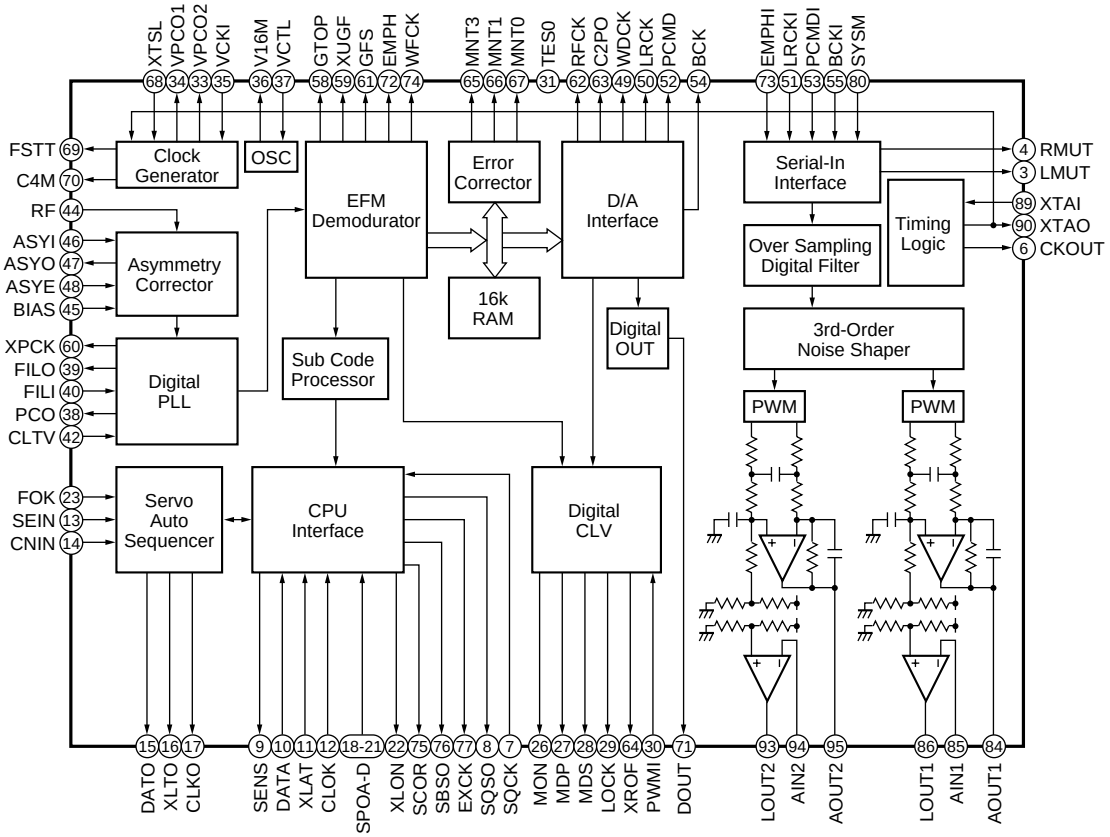
■ CXD2529Q (CD MAIN UNIT : IC1301)

• DIGITAL SIGNAL PROCESSING for CD

● Pin Arrangement (Top view)



● Block Diagram



● Pin Function

No.	Pin Name	I/O	Function
1	VDD	–	Power supply (+5V)
2	VSS	–	GND
3	LMUT	O	Left-channel zero detection flag
4	RMUT	O	Right-channel zero detection flag
5	TES2	O	TEST output pin;normally open
6	CKOUT	O	Master clock frequency-divider output Selects and outputs XTAI × 1, × 1/2, × 1/4 or low only
7	SQCK	I	SQSO readout clock input
8	SQSO	O	Sub Q 80-bit serial output
9	SENS	O	SENS output to CPU
10	DATA	I	Serial data input from CPU
11	XLAT	I	Latch input from CPU Serial data is latched at the falling edge
12	CLOK	I	Serial data transfer clock input from CPU
13	SEIN	I	SENS input from SSP
14	CNIN	I	Track jump count signal input
15	DATO	O	Serial data output to SSP
16	XLTO	O	Serial data latch output to SSP Latched at the falling edge
17	CLKO	O	Serial data transfer clock output to SSP
18	SPOA	I	Microcomputer extended interface (input A)
19	SPOB	I	Microcomputer extended interface (input B)
20	SPOC	I	Microcomputer extended interface (input C)
21	SPOD	I	Microcomputer extended interface (input D)
22	XLON	O	Microcomputer extended interface (output)
23	FOK	I	Focus OK input Used for SENS output and the servo auto sequencer
24	VDD	–	Power supply (+5V)
25	VSS	–	GND
26	MON	O	Spindle motor on/off control output
27	MDP	O	Spindle motor servo control
28	MDS	O	
29	LOCK	O	GFS is sampled at 460Hz;when GFS is high, this pin outputs a high signal If GFS is low eight consecutive samples, this pin outputs low
30	PWMI	I	Spindle motor external control input
31	TES0	I	TEST pin;normally GND
32	TES1		
33	VPCO2	O	Wide-band EFM PLL charge pump output Turned on/off by FCSW of address E
34	VPCO1	O	Charge pump output for wide-band EFM PLL
35	VCKI	I	VCO2 oscillation input for the wide-band EFM PLL
36	V16M	O	VCO2 oscillation output for the wide-band EFM PLL
37	VCTL	I	VCO2 control voltage input for the wide-band EFM PLL
38	PCO	O	Master PLL charge pump output
39	FILO	O	Master PLL (slave=digital PLL) filter output
40	FILI	I	Master PLL filter input
41	AVSS	–	Analog GND
42	CLTV	I	Master VCO control voltage input
43	AVDD	–	Analog power supply (+5V)
44	RF	I	EFM signal input
45	BIAS	I	Constant current input of the asymmetry circuit
46	ASYI	I	Asymmetry comparator voltage input
47	ASYO	O	EFM full-swing output (low=VSS, high=VDD)
48	ASYE	I	Low:asymmetry circuit off;high:asymmetry circuit on
49	WDCK	O	D/A interface Word clock f=2fs
50	LRCK	O	D/A interface LR clock output f=fs
51	LRCKI	I	LR clock input
52	PCMD	O	D/A interface Serial data output (two's complement, MSB first)
53	PCMDI	I	D/A interface Serial data input (two's complement, MSB first)

No.	Pin Name	I/O	Function
54	BCK	O	D/A interface Bit clock output
55	BCKI	I	D/A interface Bit clock input
56	VSS	–	GND
57	VDD	–	Power supply (+5V)
58	GTOP	O	GTOP output
59	XUGF	O	XUGF output
60	XPCK	O	XPLCK output
61	GFS	O	GFS output
62	RFCK	O	RFCK output
63	C2PO	O	C2PO output
64	XROF	O	XRAOF output
65	MINT3	O	MNT3 output
66	MINT1	O	MNT1 output
67	MINT0	O	MNT0 output
68	XTSL	I	Crystal selector input Low:16.9344MHz;high:33.8688MHz
69	FSTT	O	2/3 frequency-divider output for pins 89 and 90
70	C4M	O	4.2336MHz output 1/4 frequency-divided VCKI output in CAV-W mode
71	DOUT	O	Digital out output
72	EMPH	O	Outputs a high signal when the playback disc has emphasis, and a low signal when there is no emphasis
73	EMPHI	I	Inputs a high signal when de-emphasis is on, and a low signal when de-emphasis is off
74	WFCK	O	WFCK output
75	SCOR	O	Outputs a high signal when either subcode sync S0 or S1 is detected
76	SBSO	O	Sub P to W serial output
77	EXCK	I	SBSO readout clock input
78	VSS	–	GND
79	VDD	–	Power supply (+5V)
80	SYSM	I	Mute input Active when high
81	NC	–	Not used
82	AVSS	–	Analog GND
83	AVDD	–	Analog power supply (+5V)
84	AOUT1	O	Left-channel analog output
85	AIN1	I	Left-channel operational amplifier input
86	LOUT1	O	Left-channel LINE output
87	AVSS	–	Analog GND
88	XVDD	–	Power supply for master clock
89	XTAI	I	Crystal oscillation circuit input Input the external master clock via this pin
90	XTAO	O	Crystal oscillation circuit output
91	XVSS	–	GND for master clock
92	AVSS	–	Analog GND
93	LOUT2	O	Right-channel LINE output
94	AIN2	I	Right-channel operational amplifier input
95	AOUT2	O	Right-channel analog output
96	AVDD	–	Analog power supply (+5V)
97	AVSS	–	Analog GND
98	NC	–	Not used
99	NC	–	Not used
100	XRST	I	System reset Reset when low

Notes)

- PCMD is an MSB first, two's complement output.
- GTOP is used to monitor the frame sync protection status. (High:sync protection window released)
- XUGF is the negative pulse for the frame sync derived from the EFM signal. It is the signal before sync protection.
- XPLCK is the inverse of the EFM PLL clock. The PLL is designed so that the falling edge of XPLCK and the EFM signal transition point coincide.
- GFS goes high when the frame sync and the insertion protection timing match.
- RFCK is derived with the crystal accuracy. This signal has a cycle of 136µs (during normal-speed).
- C2PO represents the data error status.
- XRAOF is generated when the 16K RAM exceeds the ±4F jitter margin.

■ PD4843B (CD MAIN UNIT : IC6101)

• SYSTEM CONTROL UCOM

● Pin Function

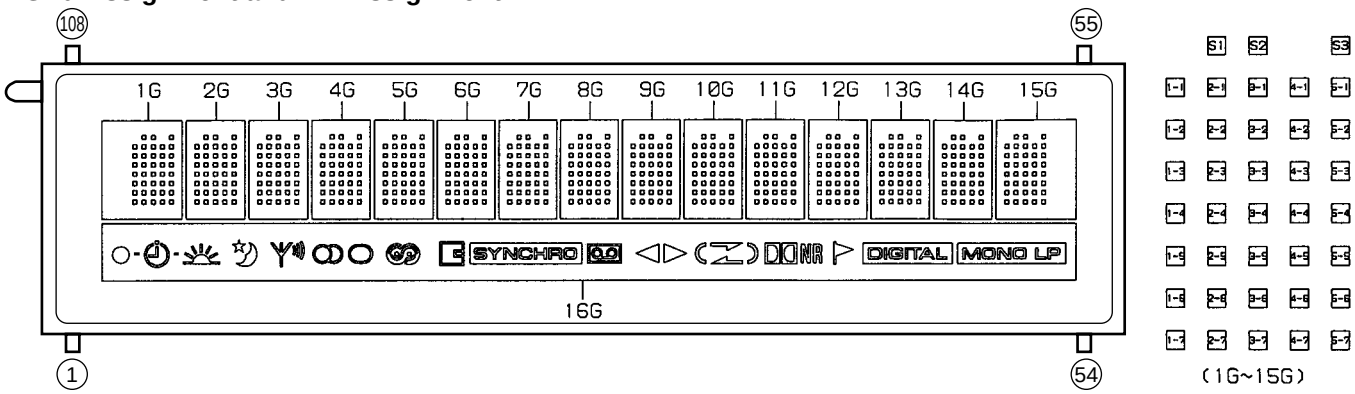
No.	Mark	Pin Name	I/O	Function	No.	Mark	Pin Name	I/O	Function
1	P15/ANI5	S.THERMO	I	A/D input for Sub-thermistor	41	P65/WR	ROMUTE	I	MUTE request of CD R ch O
2	P16/ANI6	J/EX	I	Destination switch input H:J, L:EX	42	P66/WAIT	LOMUTE	I	MUTE request of CD L ch O
3	P17/ANI7	S.CLK	I	System bus CLOCK	43	P67/ASTB	XCLMP	I	CD clamp switch input
4	AVss	———	–	Ground of A/D converter	44	P30/TO0	XOPEN	I	CD open switch input
5	P130	S.DAT1	I	System bus DATA IN	45	P31/TO1	XINSD	I	CD slider inside switch
6	P131	S.DAT0	O	System bus DATA OUT	46	P32/TO2	LOIN	O	CD tray IN
7	AVREF1	———	–	Reference voltage input of D/A	47	P33/TI1	LOOUT	O	CD tray OUT
8	P70/SI2	FLCE	O	FL driver CE	48	P34/TI2	XCDPOW	O	Not used
9	P71/SO2	FLDATA	O	FL driver DATA	49	P35/PCL	SPCONT	O	Speaker relay control
10	P72/SCK2	FLCLK	O	FL driver CLOCK	50	P36/BUZ	XPOWON	O	POWER ON/OFF
11	P20/SI1	SQSO	I	CD SQSO (CXD2529Q)	51	P37	FLPOW	O	FL POWER ON/OFF
12	P21/SO1	CDDAT	O	CD DATA (CXD2529Q)	52	P120/RTP0	FANDRV	O	Fan control HI/LOW
13	P22/SCK1	CDCLK	O	CD CLOCK (CXD2529Q)	53	P121/RTP1	———	O	Not used
14	P23/STB	H.P.SW	I	Headphone switch	54	P122/RTP2	TESTU	I	Unit checker TEST MODE
15	P24/BUSY	D.REQ	O	Display data CS	55	P123/RTP3	TXMUTE	O	TUNER MUTE / IF COUNT
16	P25/SI0	D.DAT	I	Display data DATA	56	P124/RTP4	TXD.O.	I	TUNER DATA OUT (LC72131MD) (PLL frequency synthesizer for elect - ronic tuning)
17	P26/SO0	———	O	Not used	57	P125/RTP5	PLLCLK	O	TUNER CLOCK (LC72131MD) (PLL frequency synthesizer for elect - ronic tuning)
18	P27/SCK0	D.CLK	I	Display data CLOCK	58	P126/RTP6	TXDI	O	TUNER DATA IN (LC72131MD) (PLL frequency synthesizer for elect - ronic tuning)
19	P40/AD0	———	O	Not used	59	P127/RTP7	PLLCE	O	TUNER CE
20	P41/AD1	———	O	Not used	60	RESET	XRESET	I	RESET input of microprocessor
21	P42/AD2	———	O	Not used	61	P00/INTP0	REM	I	Remote control input
22	P43/AD3	———	O	Not used	62	P01/INTP1	ACPULSE	I	AC pulse input
23	P44/AD4	———	O	Not used	63	P02/INTP2	SCOR	I	CD SCOR
24	P45/AD5	HPPOW	O	Power supply for headphone H:ON, L:OFF	64	P03/INTP3	RDSCLK	I	RDS IC CLOCK
25	P46/AD6	VRDATA	O	Volume IC (M62419FP) DATA	65	P04/INTP4	RDSDATA	I	RDS IC DATA
26	P47/AD7	VRCLK	O	Volume IC (M62419FP) CLOCK	66	P05/INTP5	RDSQA	I	RDS DATA QUALITY
27	P50/A8	XLEDTX	O	TUNER LED control H:lights-out, L:light	67	P06/INTP6	S.REQ	I/O	System bus REQ
28	P51/A9	XLEDCD	O	CD LED control H:lights-out, L:light	68	VDD	VDD	–	Positive power supply
29	P52/A10	CDMUTEL	O	Mute control of CD analog output (Lch)	69	X2	X2	–	Crystal connection for main-system clock oscillation
30	P53/A11	CDMUTER	O	Mute control of CD analog output (Rch)	70	X1	X1	I	
31	P54/A12	XCDLA	O	CD LATCH (CXD2529Q)	71	IC	IC	–	
32	P55/A13	GFS	I	CD GFS input (CXD2529Q)	72	XT2	XT2	–	
33	VSS	———	–	Ground	73	XT1/P07	XTESTMODE	I	Test mode
34	P56/A14	CDSEN	I	CD SENSE input (CXD2529Q)	74	AVDD	AVDD	–	Power supply
35	P57/A15	CDSHUT	O	CD XTAL ON/OFF H:XTAL OFF, L:XTAL ON	75	AVREFO	AVREFO	I	Reference voltage input of D/A
36	P60	XMUTE	O	System MUTE H:MUTE OFF, L:MUTE ON	76	P10/ANI0	KEY1	I	KEY input (main unit)
37	P61	XLDON	O	CD laser diode ON/OFF H:OFF, L:ON	77	P11/ANI1	———	O	Not used
38	P62	XTCPOW	O	TAPE power supply ON/OFF H:OFF, L:ON	78	P12/ANI2	KEY3	I	KEY input (display)
39	P63	XRDSFM	O	RDS IC power supply ON/OFF	79	P13/ANI3	ST/TUNE	I	STEREO/TUNED
40	P64/RD	CDRES	O	CD RESET (CXD2529Q)	80	P14/ANI4	MTHERMO	I	Thermistor input (M)

7.1.2 DISPLAY

■ AAV7051 (CD FLDP UNIT : V5701)

• FL DISPLAY

• Grid Assignment and Pin Assignment



• Pin Connection

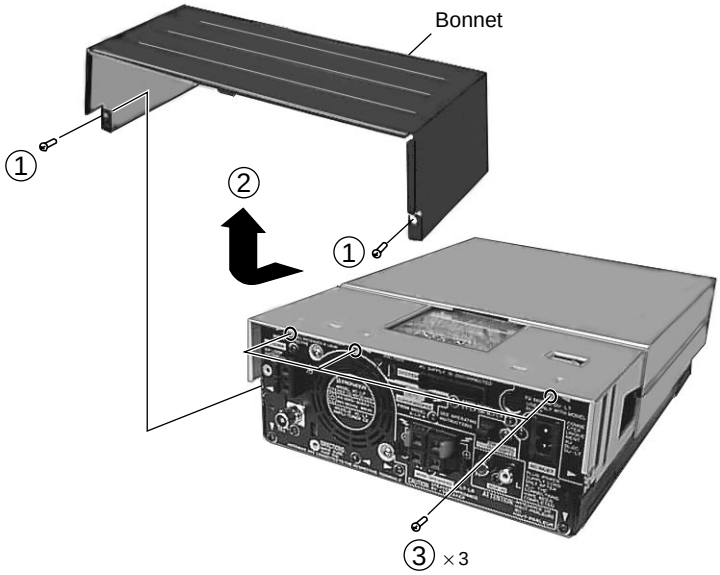
PIN NO.	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108
CONNECTION	F1 F2 NP NP P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 P22 P23 P24 P25 P26 P27 P28 P29 P30 P31 P32 P33 P34 P35 P36 P37 P38 NP NP NP

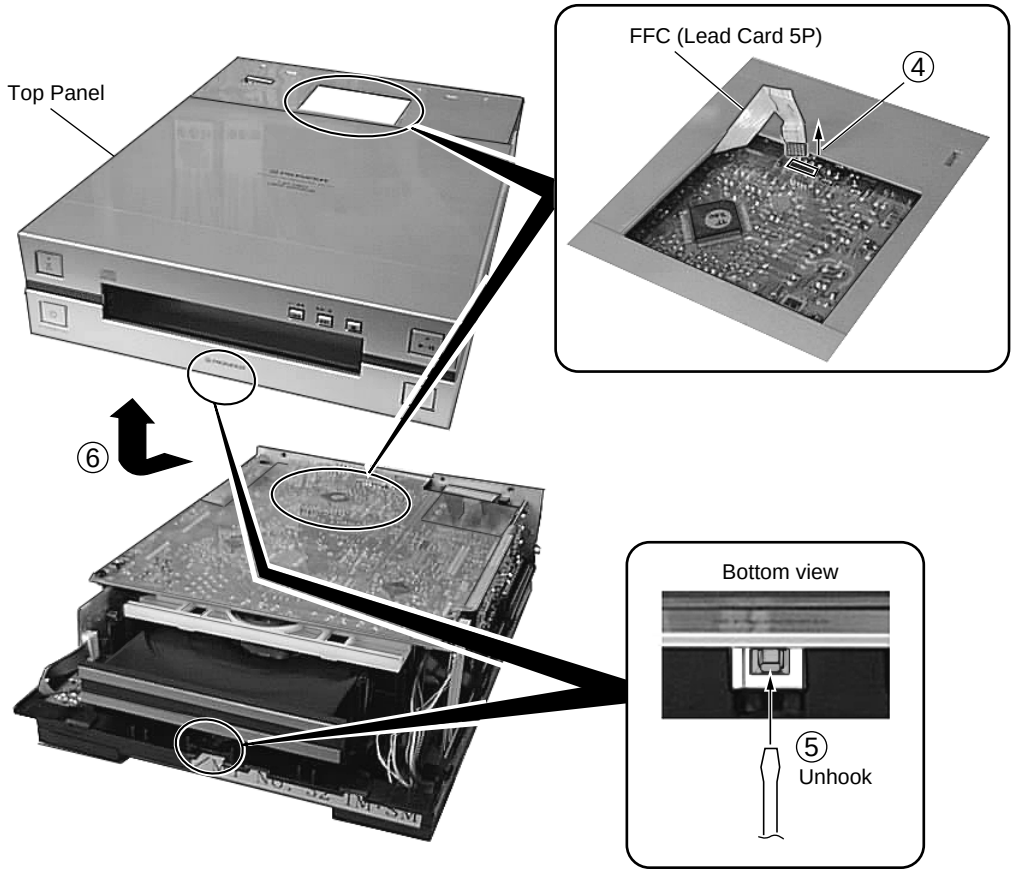
7.2 DIAGNOSIS

7.2.1 DISASSEMBLY

(1) BONNET AND TOP PANEL

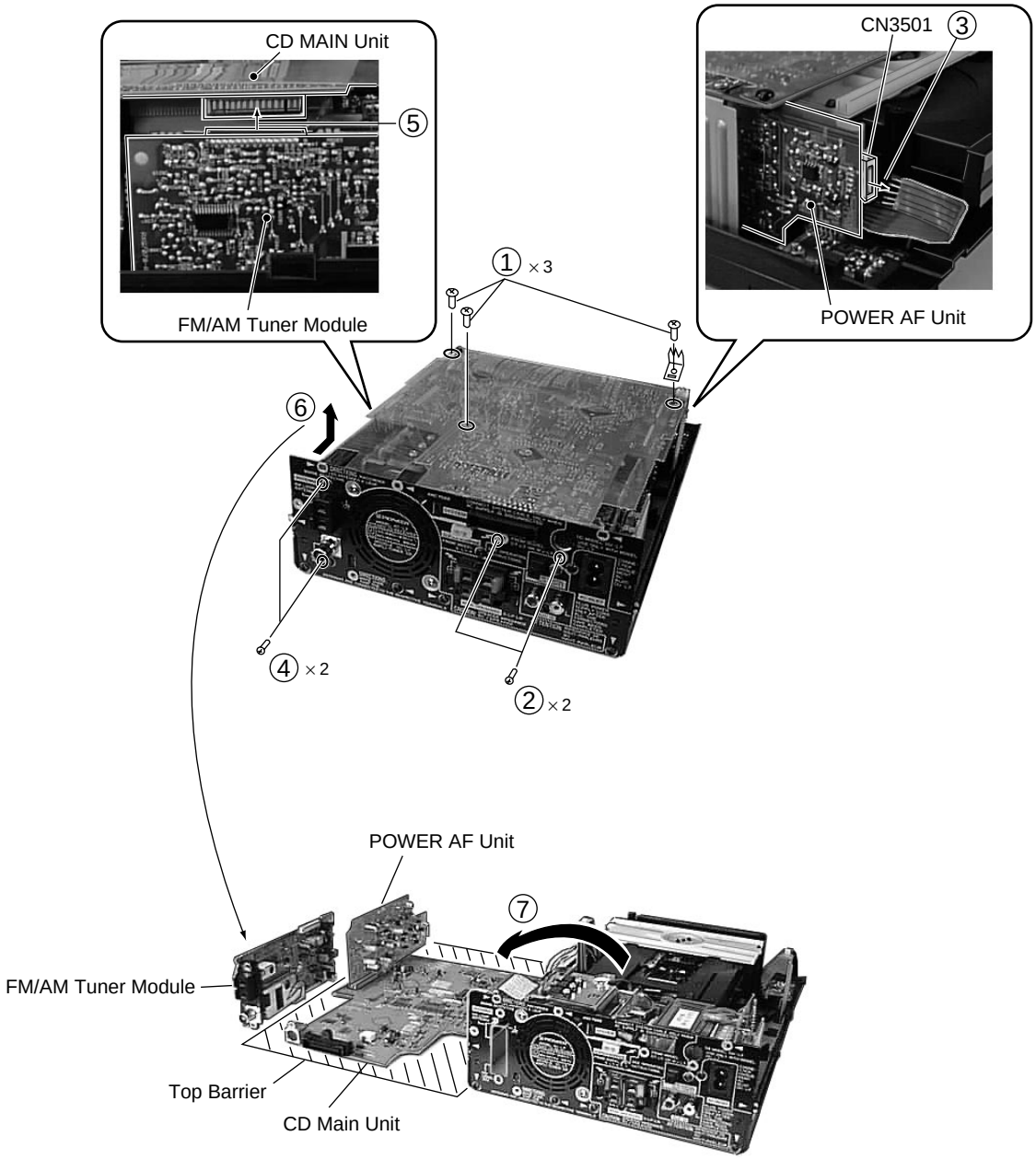
Disassembly : ①→②→③→④→⑤→⑥
Assembly : ⑥→⑤→④→③→②→①





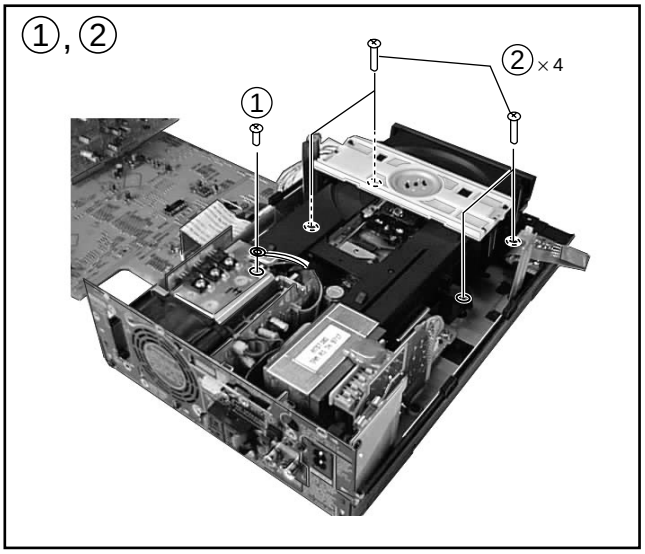
(2) CD MAIN UNIT, POWER AF UNIT AND FM/AM TUNER MODULE

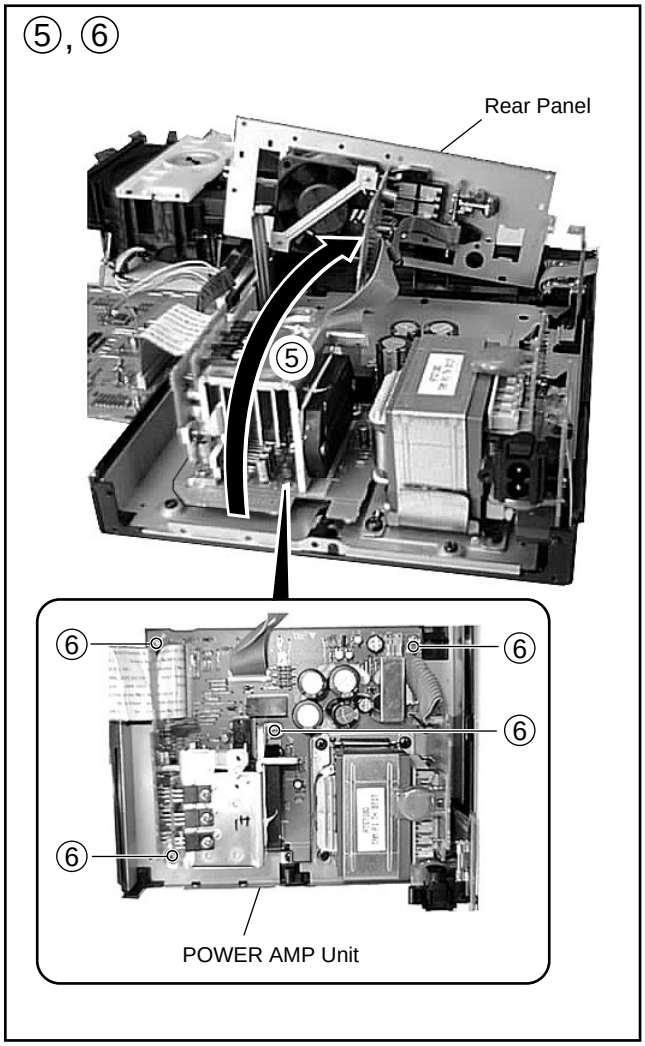
Disassembly : ①→②→③→④→⑤→⑥→⑦
Assembly : ⑦→⑥→⑤→④→③→②→①

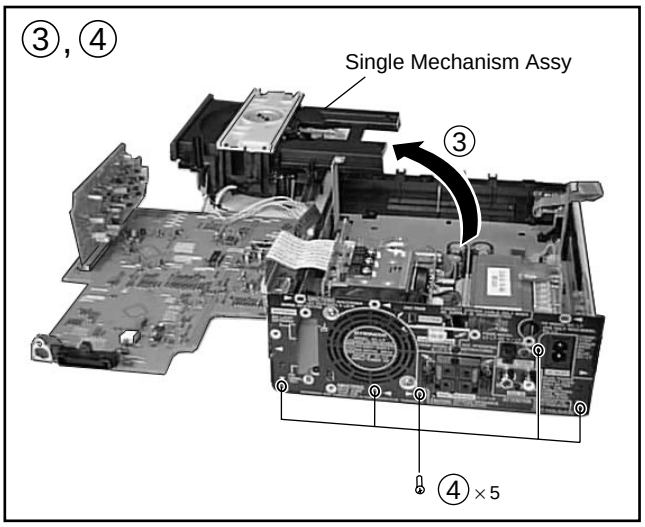


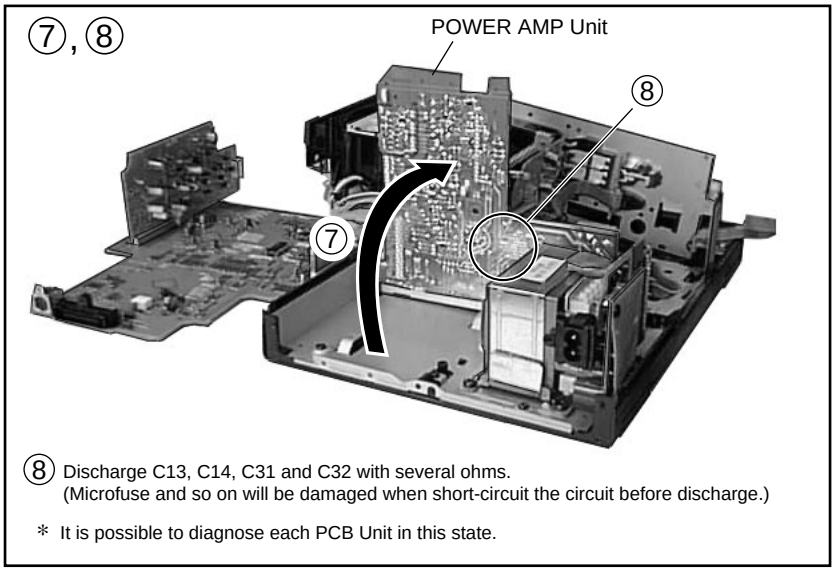
(3) SINGLE MECHANISM ASSY AND POWER AMP UNIT

Disassembly : ①→②→③→④→⑤→⑥→⑦→⑧
Assembly : ⑧→⑦→⑥→⑤→④→③→②→①







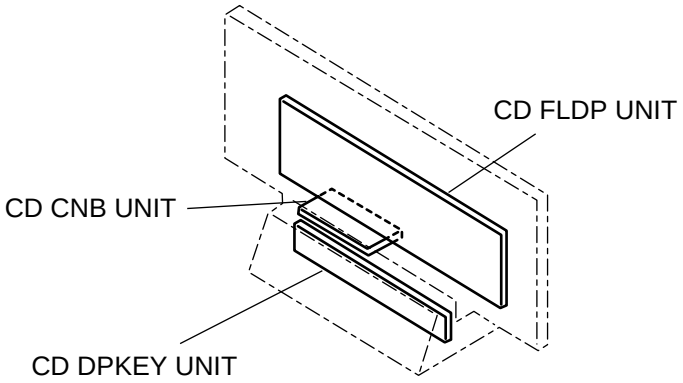


⑧ Discharge C13, C14, C31 and C32 with several ohms.
(Microfuse and so on will be damaged when short-circuit the circuit before discharge.)

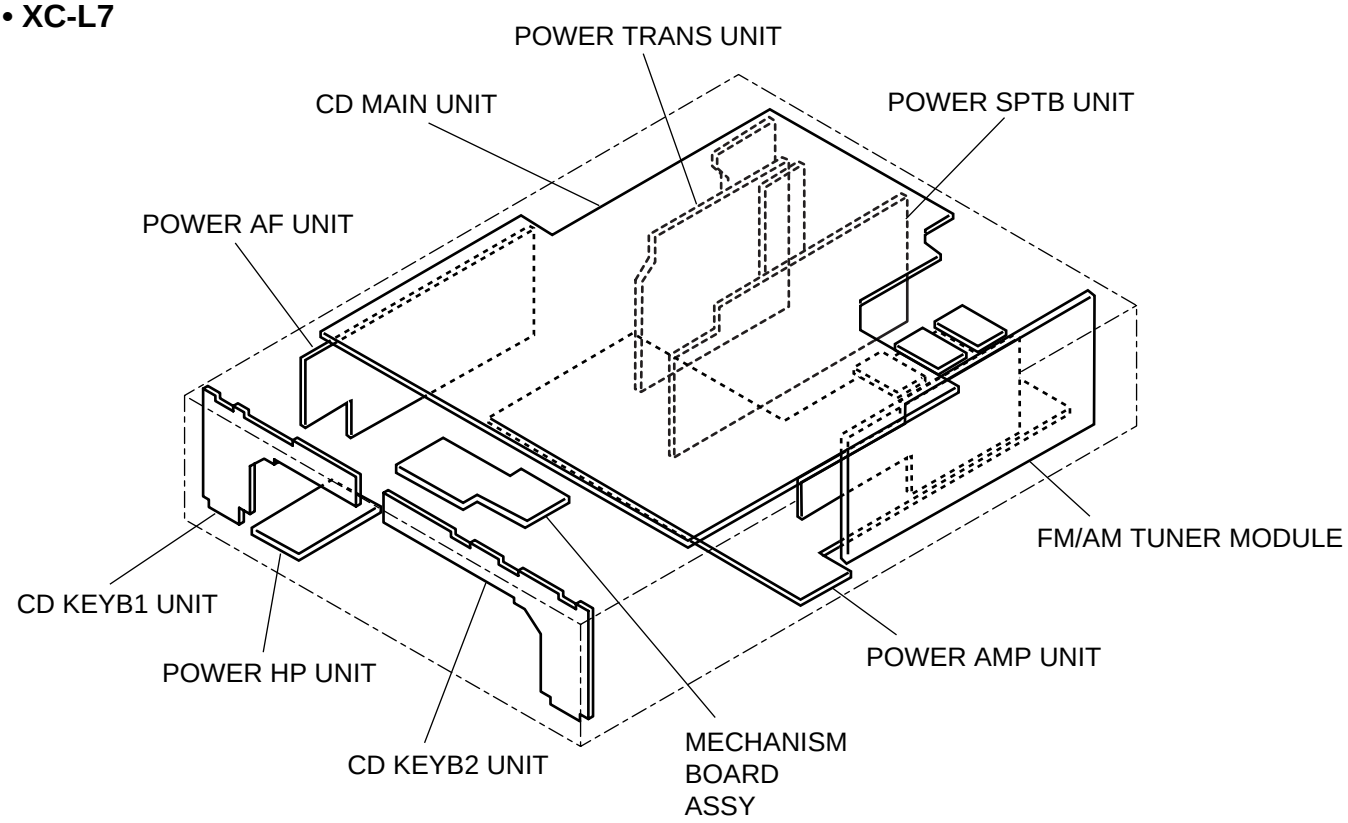
* It is possible to diagnose each PCB Unit in this state.

7.2.2 PCB LOCATIONS

• DU-L7

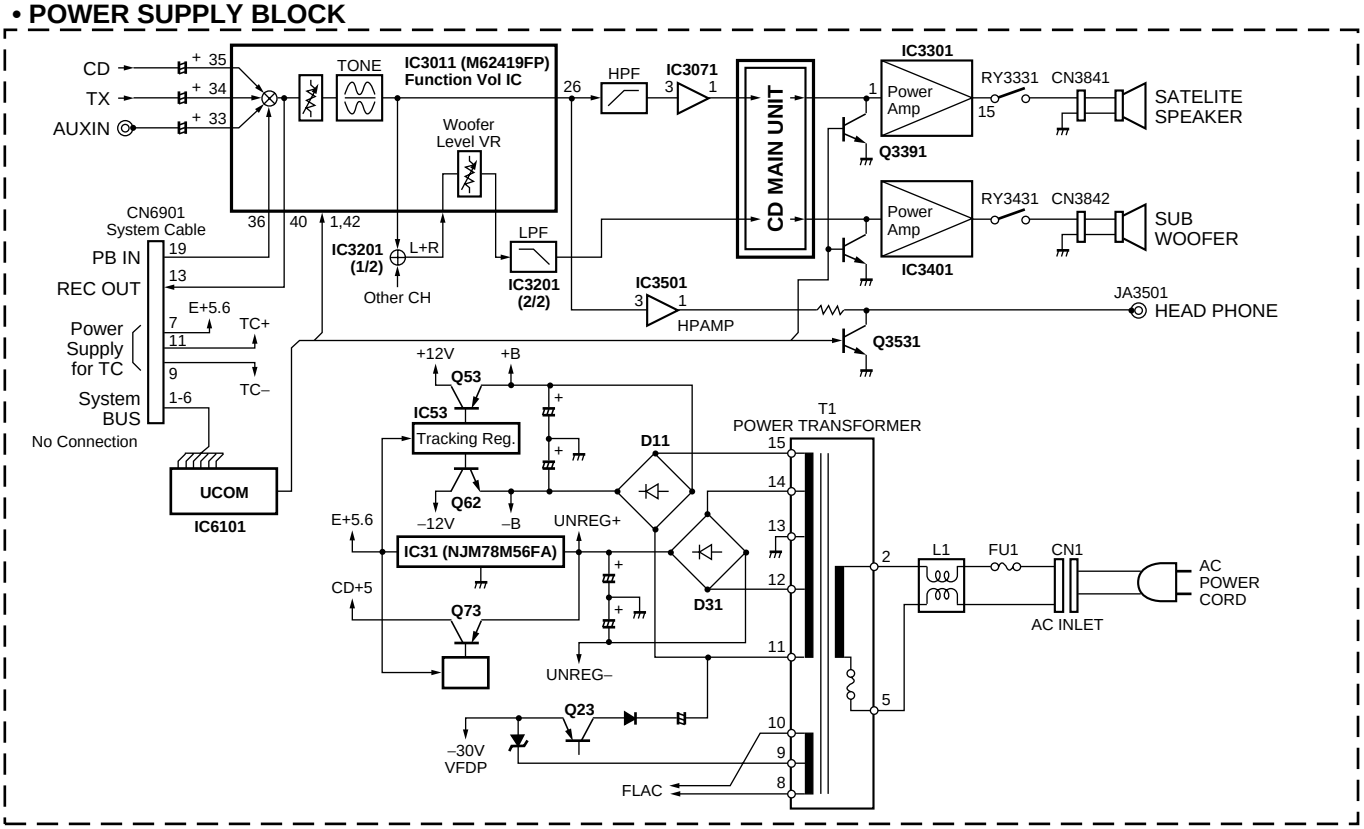


• XC-L7

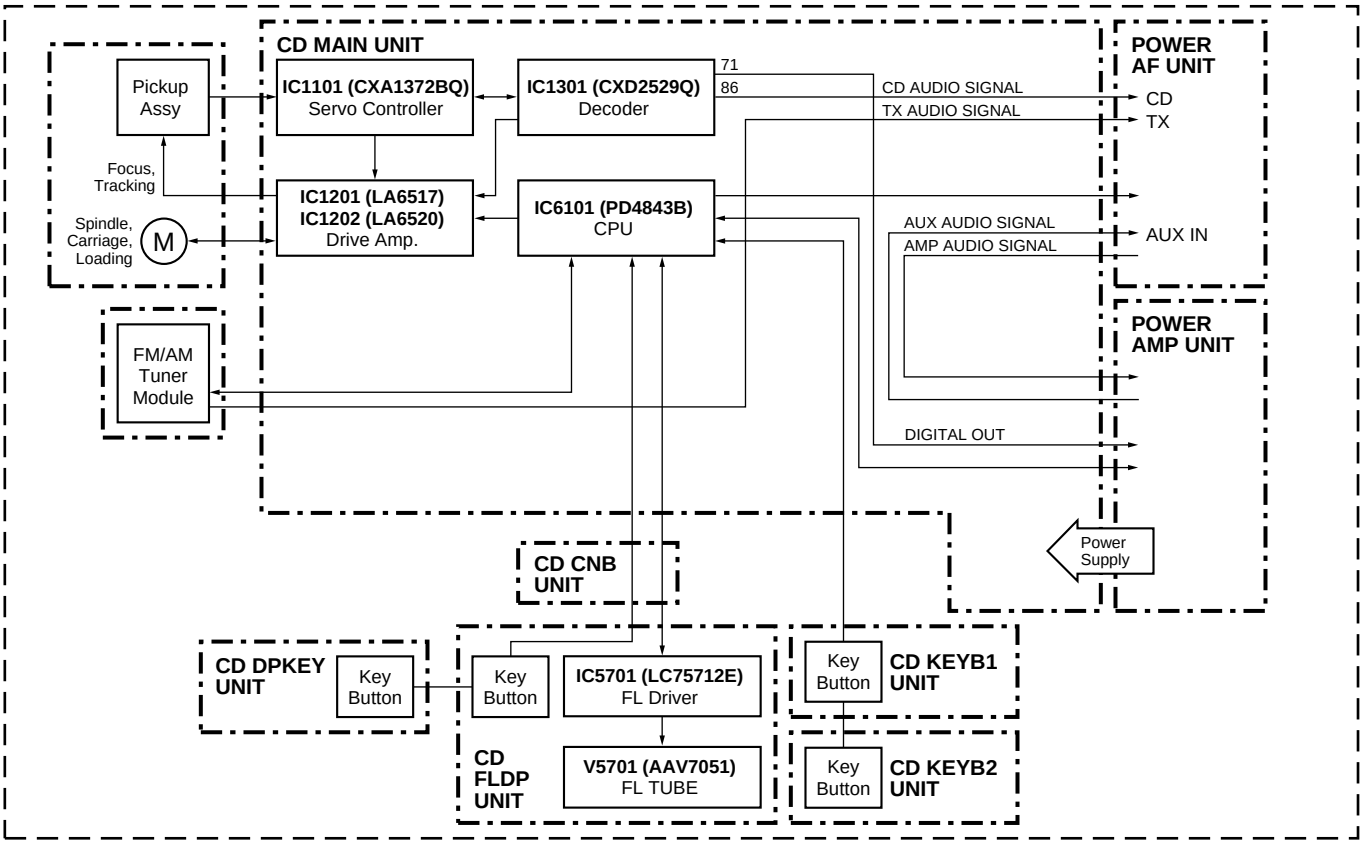


7.3 BLOCK DIAGRAM

• POWER SUPPLY BLOCK



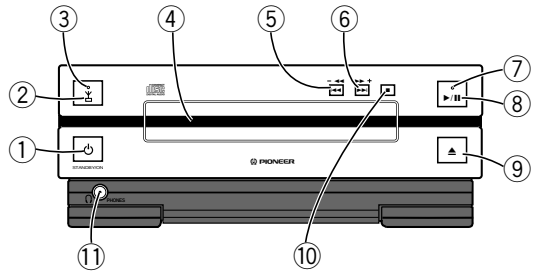
• MAIN BLOCK



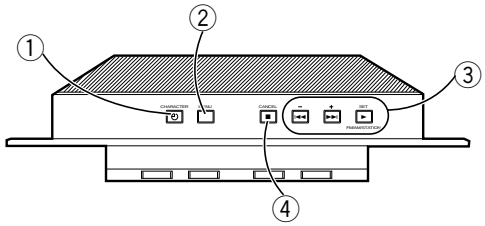
8. PANEL FACILITIES AND SPECIFICATIONS

• PANEL FACILITIES

STEREO CD RECEIVER XC-L7



DISPLAY UNIT DU-L7



STEREO CD RECEIVER XC-L7

① **POWER, STANDBY/ON switch**

② **FM/AM/station button**

③ **Tuner indicator**

④ **CD tray**

⑤ **button**

⑥ **button**

- Roles of common operation buttons vary depending on the input function currently selected, as follows:

During Tuner Operation

: Frequency and station – (down) button.

: Frequency and station + (up) button.

During CD Operation

: Fast reverse/track search button.

: Fast forward/track search button.

⑦ **Playback indicator**

⑧ **CD Play/Pause button**

⑨ **CD tray Open/Close button (⏏)**

⑩ **CD stop button (■).**

⑪ **PHONES jack**
For use with headphones equipped with a stereo miniplug. When headphones are connected, sound to the speakers is disabled.

DISPLAY UNIT DU-L7

① **CHARACTER/Timer button**

② **MENU button**

③ SET FM/AM/STATION **buttons**

- Roles of common operation buttons vary depending on the input function currently selected.

④ **CANCEL/Stop button**

⑤ **REMOTE SENSOR**

⑥ **VOLUME ∧ (UP), ∨ (DOWN) buttons**

⑦ **FUNCTION button**

⑧ **POWER STANDBY/ON switch**

[DISPLAY SECTION]

⑨ **Lights when station is tuned.**

⑩ **Lights when receiving a stereo broadcast.**

⑪ **Shows station frequencies and main operating conditions.**

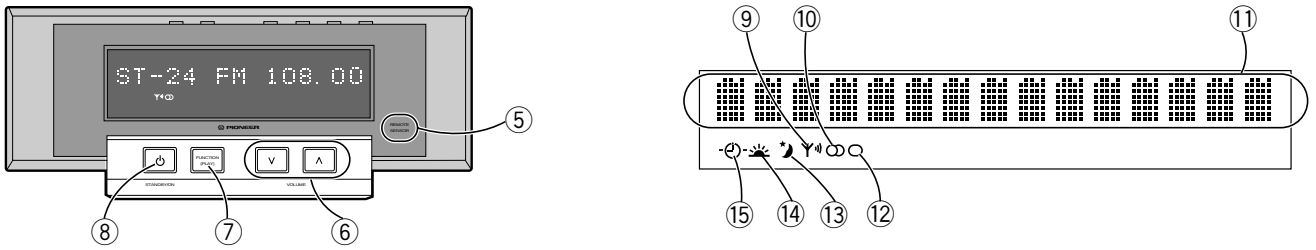
⑫ **Lights during monaural mode.**

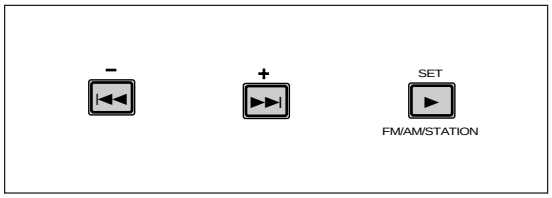
⑬ **Lights during setting and operation of the sleep timer.**

⑭ **Lights during wake-up timer setting mode; flashes during operation.**

⑮ **Lights during setting and operation of the wake-up timer.**

DISPLAY UNIT DU-L7





DISPLAY UNIT DU-L7: Roles of common operation buttons vary depending on the input function currently selected, as follows:

During Tuner Operation

: Frequency and station – (down) button.

: Frequency and station + (up) button.

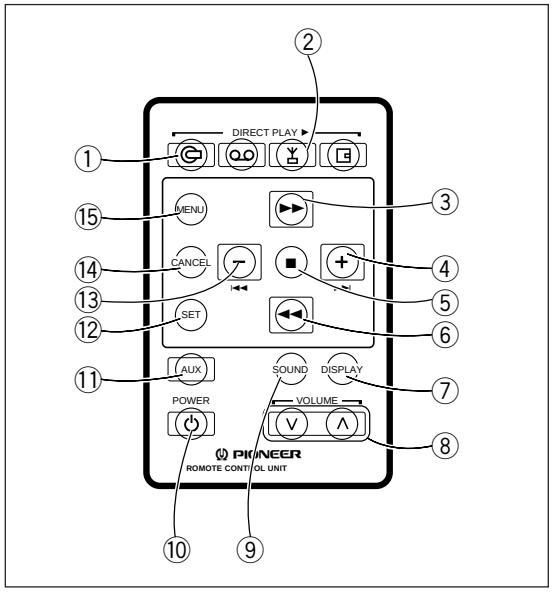
: FM/AM/STATION button.

During CD Operation

: Reverse track search button.

: Forward track search button.

: Play/Pause button.



REMOTE CONTROL UNIT

① **CD Play/Pause button**

② **FM/AM/Station button**

③ **button**

④ **button**

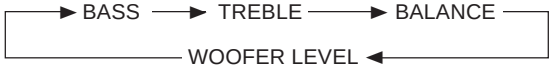
⑤ **button**

⑥ **button**

⑦ **DISPLAY button**

⑧ **VOLUME ∧ (UP), ∨ (DOWN) buttons**

⑨ **SOUND button**
Each time this button is pressed, the sound mode changes in the following sequence:



⑩ **POWER button (POWER STANDBY/ON)**

⑪ **AUX function button**

⑫ **SET button**

NOTE :

The and buttons do not operate on this component.

⑬ **button**

⑭ **CANCEL button**

⑮ **MENU button**

- Roles of buttons ③, ④, ⑤, ⑥, and ⑬ vary depending on the input function currently selected, as follows:

During Tuner Operation

: Station + (up) button

: Station - (down) button

: Frequency up button

: Frequency down button

During CD Operation

: Forward track search button

: Reverse track search button

: Stop button

: Fast forward (manual search) button

: Fast reverse (manual search) button

• SPECIFICATIONS

Stereo CD Receiver: XC-L7

Amplifier Section

Output for Satellite Speakers

Continuous average power output of 20 watts* per channel, min., at 8 ohms, from 200 Hz to 20,000 Hz with no more than 0.9 % total harmonic distortion (front).**

Output for Subwoofer Speaker

Continuous average power output of 30 watts* per channel, min., at 4 ohms, from 40 Hz to 200 Hz with no more than 0.9 % total harmonic distortion (front).**

* Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifiers.

** Measured by Audio Spectrum Analyzer.

FM Tuner Section

Frequency Range ..... 87.5 - 108MHz
Antenna ..... 75 Ω, unbalanced

AM Tuner Section

Frequency Range ..... 530 kHz - 1,700 kHz (10 kHz step); 531 kHz - 1,602 kHz (9 kHz step)
Antenna ..... Loop antenna

Compact Disc Section

Type ..... Compact disc digital audio system
Usable discs ..... Compact discs
Channels ..... 2 (stereo)
Frequency Response ..... 4 Hz–20 kHz
Signal-to-Noise Ratio ..... 110 dB (EIAJ)
Wow and Flutter ..... Limit of measurement (0.001%) or less (EIAJ)

Power Requirements ..... AC 120 V, 60 Hz
Power Consumption ..... 75 W
Dimensions ..... 220 (W) x 85 (H) x 310 (D) mm
8-11/16 (W) x 3-3/8 (H) x 12-3/16 (D) in
Weight ..... 4.0 kg (8 lb 13 oz)

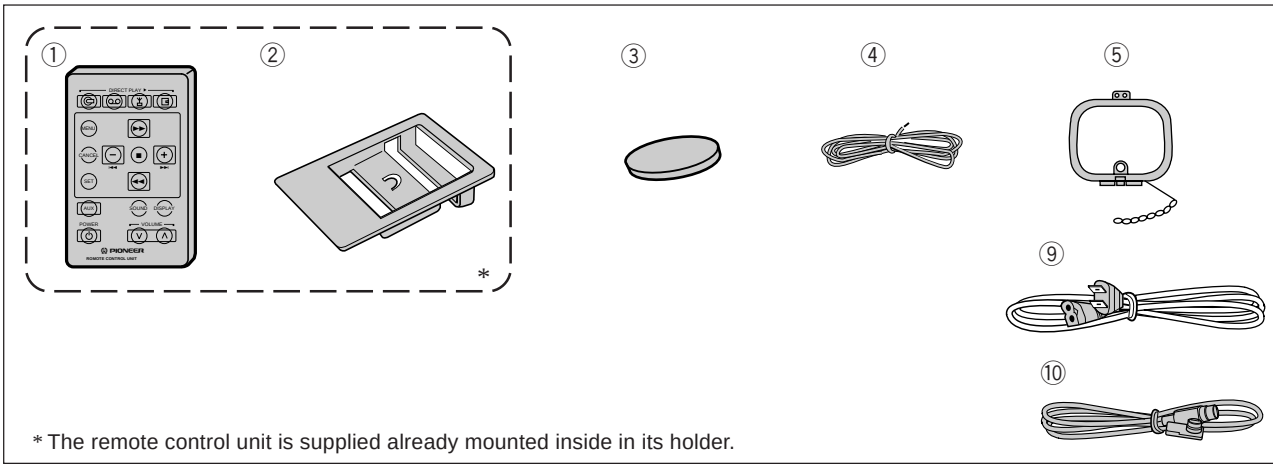
Accessories

Operating Instructions 1
Warranty Card 1
FM antenna 1
AM loop antenna 1
Remote control unit 1
Lithium battery (CR2025) 1
Remote control unit holder 1
Power cord 1
Display unit cord 1

NOTE:

Specifications and design subject to possible modification without notice, due to improvements.

• Accessories



* The remote control unit is supplied already mounted inside in its holder.

① Remote control unit x 1 : AXD7145 (CU-XC004)
② Remote control unit holder x 1 : AAH7008
③ Lithium battery (CR2025) x 1 : VEM1009
④ FM antenna x 1 : ADH7004
⑤ AM loop antenna (shown assembled) x 1 : ATB7007
⑨ Power cord x 1 : ADG1152
⑩ Display unit cord (10p mini-DIN cable) x 1 : ADE7014
- Operating instructions x 1
- Warranty card x 1